

# Initial Study with Mitigated Negative Declaration



March 2008

## US Route 101 East Washington Street Interchange

SCH 2007112073

04-SON-101-KP 6.4-8.3/PM 4.05-5.2

Prepared by the  
State of California Department of Transportation



The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327.



# **General Information About This Document**

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## **What's in this document:**

This document is a Mitigated Negative Declaration (MND) based upon an Initial Study (IS) in accordance with the California Environmental Quality Act. The document describes the proposed project and why it is being approved. It also describes alternatives for the Project, the existing environment that could be affected by the Project, the potential impacts from each of the alternatives, and the proposed avoidance, minimization, and proposed mitigation measures.

Caltrans released the US 101 East Washington Street Interchange Project IS on November 14, 2007, and held a public open house on November 29, 2007 to give the public an opportunity to review and comment on the document and the project. The comment period ended on December 14, 2007. This MND takes into account the comments received on the IS (see Chapter 5, Comments and Coordination).

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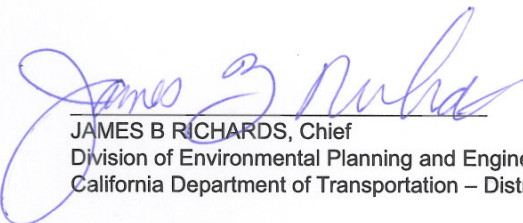
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04-SON-101-PM 4.05/5.3  
EA 264000-6EWASH

Sonoma 101 East Washington Interchange Improvements in the City of Petaluma

## INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

Submitted Pursuant to: Division 13, California Public Resources Code

THE STATE OF CALIFORNIA  
Department of Transportation



JAMES B RICHARDS, Chief  
Division of Environmental Planning and Engineering  
California Department of Transportation – District 04

3/10/08  
Date of Approval



# Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

## Project Description

The California Department of Transportation (Caltrans) proposes to modify the East Washington Street Interchange on U.S. Route 101 in Petaluma, Sonoma County, to reduce traffic congestion that routinely backs up onto the mainline of the highway. The Project includes reconfiguring the southbound on-ramp, widening the terminus of the northbound off-ramp from two lanes to four lanes, and adding a new northbound diagonal on-ramp with a new bridge to free-span Washington Creek.

## Determination

The Department has prepared an Initial Study for this project, and following public review, has determined from this study that the proposed project would not have a significant effect on the environment for the following reasons:

Impacts to visual resources would be mitigated to a level that is less than significant with implementation of the following mitigation measures:

Mitigation Measure 2.3-1: Replacement Landscaping in Southwest Quadrant between Proposed Biostrip and Drainage Ditch

Mitigation Measure 2.3-2: Enhanced Tree Planting on Interchange Embankments; Enhanced Redwood Planting in Offsite Locations

Mitigation Measure 2.3-3: Northbound On-Ramp Retaining Wall Mitigation Measures

Mitigation Measure 2.3-4: Visual Screening of Shopping Center Loading Docks

Mitigation Measure 2.3-5: Minimization of Tree Removal in Interchange and on East Washington Street

Mitigation Measure 2.3-6: Replacement Planting Within Interchange

Mitigation Measure 2.3-7: Preservation of Existing Trees, or Replacement Planting at Frontage of Apartments in Northeast Quadrant

Mitigation Measure 2.3-8: Mitigation of Construction-related Light and Glare Impacts

  
James B. Richards

3/10/08  
Date

Deputy District Director of Environmental Planning and Engineering  
California Department of Transportation – District 4

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## List of Abbreviated Terms

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AADT	annual average daily traffic
APE	Area of Potential Effect
ASR	Archaeological Survey Report
BA	Biological Assessment
BAAB	Bay Area Air Basin
BAAQMD	Bay Area Air Quality Management District
BMP	Best Management Practice
CAA	Clean Air Act
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDFG	California Department of Fish and Game
CE	Categorical Exclusion
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CO	Carbon Monoxide
CWA	Clean Water Act
dBA	Decibels
EPA	Environmental Protection Agency
ESA	Environmentally Sensitive Area
FEMA	Federal Emergency Management Administration
FEMA FIS	Federal Emergency Management Administration Flood Insurance Studies
FHWA	Federal Highway Administration
HPSR	Historic Property Survey Report
HOV	High Occupancy Vehicle
IS	Initial Study
ISA	International Society of Arboriculture
KP or kp	Kilometer Post
Leq(h)	Hourly Equivalent Sound Level
LWF	Lightweight Fill
LOTB's	Log of Test Borings
MBTA	Migratory Bird Treaty Act
MCE	Maximum Credible Earthquake
mm	millimeter
MND	Mitigated Negative Declaration
MSATs	Mobile Source Air Toxics
MSE	Mechanical Stabilized Embankment
MSN	Marin Sonoma Narrows
MTC	Metropolitan Transportation Commission
NAC	Noise Abatement Criteria



NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NLEV	National Low Emission Vehicle
NO <sub>x</sub>	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
PG&E	Pacific Gas and Electric Company
PDCD	Petaluma Community Development Commission
PSR	Project Study Report
PM or pm	Post Mile
PM	Particulate Matter
RFG	Reformulated Gasoline
ROW	Right of Way
SCWA	Sonoma County Water Agency
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TASAS	Traffic Accident Surveillance and Analysis System
TCEs	Temporary Construction Easements
TCM	Traffic Control Measures
TIP	Transportation Improvement Program
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VIA	Visual Impact Analysis
VMT	Vehicle Miles Traveled
Waters	Waters of the U.S.

# **CHAPTER 1** Proposed Project

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## **1.1 Introduction**

The Sonoma 101 East Washington Interchange Improvements Project (Project) consists of interchange improvements along the East Washington Street Interchange portion of U.S. Route 101 (Route 101) in Petaluma, Sonoma County, California. The main purpose of the proposed Project is to reduce present recurring traffic congestion and to address traffic that will result from planned future commercial developments. To this end, the proposed Project includes reconfiguration of the southbound on-ramp and construction of a new northbound diagonal on-ramp and a new bridge that will free-span Washington Creek.

The Project was initially proposed as a part of the Marin-Sonoma Narrows High Occupancy Vehicle (HOV) Widening Project (Marin-Sonoma Narrows Project) scope, but is being analyzed herein as a separate Project so that the immediate traffic concerns of local residents can be adequately addressed. The Project, as proposed, would be compatible with the future highway improvements proposed by the Marin-Sonoma Narrows Project, which is currently in the environmental compliance stage.

## **1.2 Project Location**

The Project site, which includes a segment of Route 101 between Caulfield Lane and the Lynch Creek overcrossing, is located entirely within the limits of the City of Petaluma, Sonoma County. Figure 1.2-1 shows the Project in a regional context, and Figure 1.2-2 shows the Project limits within the City of Petaluma. This portion of Route 101 consists of a four-lane highway mainline, with two northbound and two southbound lanes. The existing on- and off-ramps to Route 101 along this stretch of highway feed traffic to and from the mainline of Route 101 onto East Washington Street, a local four-lane roadway. The Project site is located in an area comprising a mix of land uses, including residential, commercial, and light industrial uses. To the east and west of the East Washington Interchange are residential tracts dating from the mid-1950s, to the north is a large commercial development, and to the south is a vacant lot. The southwestern end of the Project site is bordered by light industrial uses, including auto-repair shops and warehouses. The design phase of this Project included the consideration of various alternative alignments and ultimately found that the Project, as proposed, best satisfies the Project purpose while avoiding significant environmental impacts, including impacts to wetlands.

## **1.3 Project Purpose and Need**

The Project has the following three main purposes:

- Reduce congestion for morning and evening commuters
- Improve access and circulation between Route 101 and local streets
- Enhance safety and operations.

## **Needs Associated With Reducing Recurrent Congestion**

Recurring traffic congestion routinely backs up onto the mainline during morning and evening hours. Forecasted 2030 traffic volumes at the East Washington Street Interchange indicate that predicted increases in congestion would result in unacceptable operational conditions unless improvements are made at this location. Northbound Route 101 would be negatively impacted by queues from the northbound off-ramp that extend to the mainline.

## **Needs Associated with Enhancing Safety Operations**

Traffic accident data for the Project within the limits of PM 4.0 to 5.1 were obtained from Caltrans for the three-year period of April 1, 2001, through March 31, 2004. One hundred twenty-two collisions were recorded on the freeway segment from PM 4.0 to PM 5.1. Fifty-one of the collisions were rear-end collisions (41.8 percent of total). Forty-four of the accidents were hit-object (36 percent). The primary collision factors were speeding in 47 of the collisions (38.5 percent) and improper turns in 26 of the collisions (21.3 percent). The high percentage of rear-end collisions on dry pavement during daylight hours, combined with speeding, indicates that a contributing factor for many accidents was traffic congestion. The improvements identified as part of this Project are intended to help alleviate traffic congestion in the Project area, thus reducing the potential for these types of collisions.

## **Needs Associated With Connections between Local Streets and Route 101**

Currently, the local street connections to Route 101 are congested. The proposed northbound, diagonal on-ramp would relieve congestion on the local streets, specifically at the intersection of East Washington Street and the Route 101 northbound ramps.

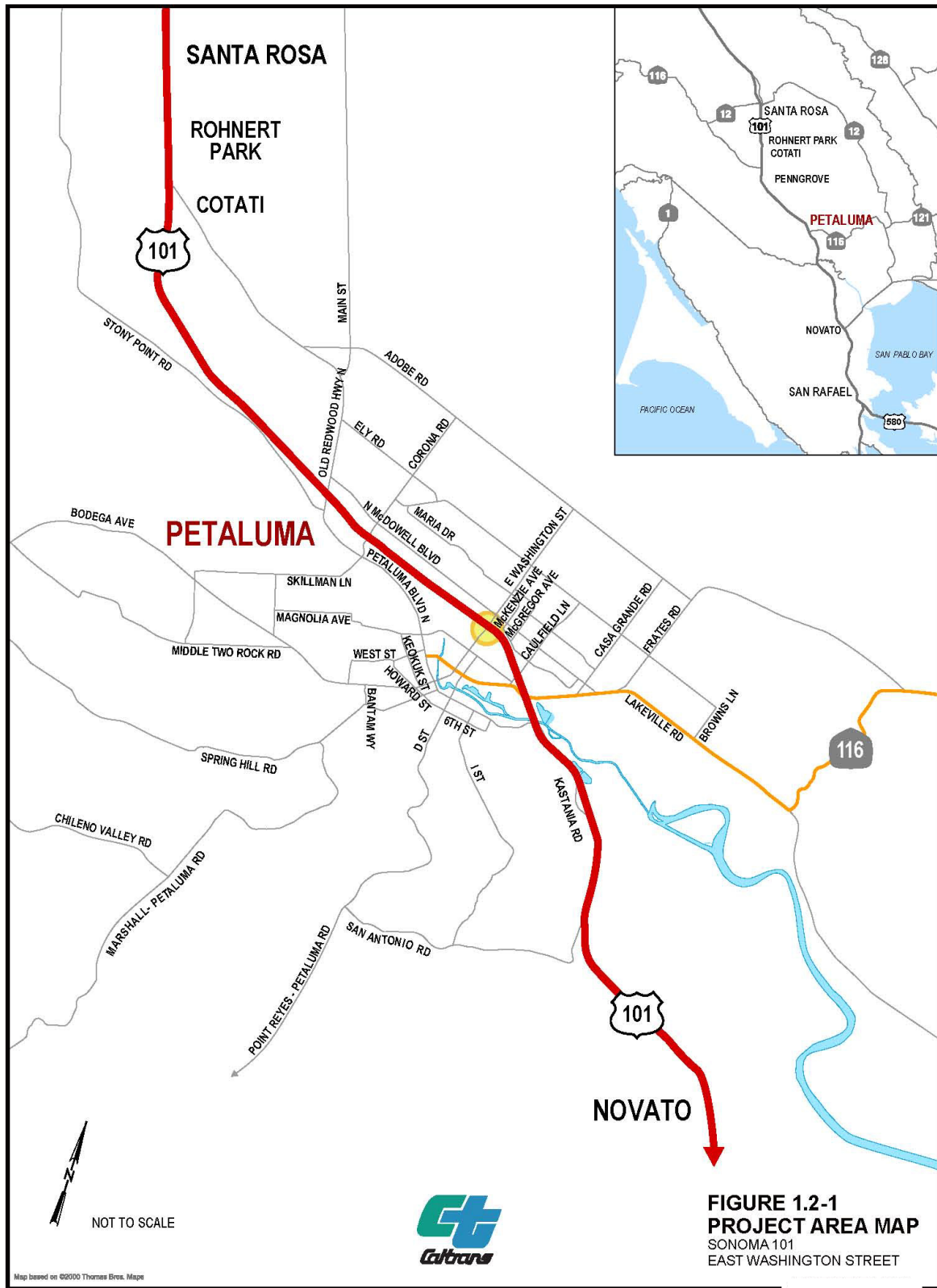
### **1.4 Funding**

The total cost estimate for this Project is \$23.0 million. Of this, \$13.5 million would be allocated to construction costs. The remainder would be used for support costs such as the cost of designing the Project, obtaining permits, obtaining right-of-way (ROW) property, and environmental compliance. The proposed Project is funded through several funding programs: \$14.5 million from federally earmarked Transportation Improvement Program (TIP) funds, \$1.6 million through Traffic Congestion Relief Program, \$2.9 million from Measure M, \$4.0 million from Petaluma Community Development Commission.

### **1.5 Project Description**

The total area of disturbance for the proposed Project consists of approximately 12.1 acres, including the highway segment (mainline), ramps and local roadways, construction staging areas, and utility easements. Approximately 2.7 acres of ROW, as well as three temporary construction easements, would need to be acquired for the purposes of Project construction and implementation. The Project is entirely within the City of Petaluma, in Sonoma County.

The main elements of the Project consist of reconfiguring the southbound on-ramp, widening the terminus of the northbound off-ramp from two lanes to four lanes, and adding a new northbound diagonal on-ramp with a new bridge to free-span Washington Creek. Figure 1.5-1 illustrates the





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project improvements. Replacement tree planting is also proposed to address and minimize the adverse visual effects of construction-related tree removal.

### **1.5.1 Interchange Improvements**

Following is a more detailed description of the proposed East Washington Interchange improvements.

Southwest Quadrant – The existing southbound diagonal on-ramp would be realigned to improve the curve radius and to include two lanes. The proposed on-ramp would consist of two lanes to accommodate future ramp metering. Approximately 0.94 acre of ROW would need to be acquired in this area. The ROW area would be acquired from the vacant lot located adjacent to the existing ROW fence.

Southeast Quadrant – At the terminus of the northbound diagonal off-ramp, the lanes would be widened from two to four lanes. Portions of the existing lanes of the northbound loop on-ramp that are presently used for traffic from westbound East Washington Street to northbound loop on-ramp would be reconstructed to carry traffic movement from northbound off-ramp to westbound East Washington Street.

Northeast Quadrant – A new northbound two-lane on-ramp would be added with a new bridge to span Washington Creek. A retaining wall and approximately 1.75 acres of ROW would be needed in this area. Existing underground and above-ground utility facilities, including gas, electric, telephone, cable TV, sewer, and water, would be relocated within a utility easement outside of the new ROW. East Washington Street would be widened to accommodate a right-turn lane to handle traffic from westbound East Washington Street to northbound Route 101. As part of a new cooperative agreement between the State and the City of Petaluma, traffic signals on East Washington would be synchronized between McDowell Boulevard intersection and northbound off-ramp intersection.

Washington Creek Bridge – The proposed bridge over Washington Creek would be a pre-cast clear span concrete structure. The length of the bridge would be approximately 119.6 feet (36.5 meters). The bridge elevation would be approximately 49 feet (15 meters) at the south end of the bridge and 46 feet (14 meters) at the north end of the bridge.

A Caltrans Structures Advance Planning Study determined the groundwater level in Washington Creek to be at 1.5-meter elevation. This elevation is considered low and distant relative to the location of the proposed bridge abutment and retaining walls. Dewatering in the vicinity of the creek is unlikely to be necessary, as construction would typically occur during dry months. However, if groundwater and surface runoff need to be prevented from entering any excavated areas (abutments, retaining walls, and footings), temporary trench drains, cofferdams, or some other drainage facility would need to be constructed. Pipes may be connected to cofferdams to carry water downstream in Washington Creek without impeding flow rates. Additionally, implementation of Caltrans Best Management Practices (BMPs) would prevent sedimentation of the stream channel and protect water quality.



To further minimize impacts to Washington Creek associated with Project construction, an environmentally sensitive area (ESA) would be designated along the top of the bank on either side of the creek. On the northeast side, project limits extend over Washington Creek; however, no work will be conducted on the northwest side of the creek.

### **1.5.2 Landscape Changes**

Project-related landscape changes will consist of replacement planting and irrigation within the Project footprint. The estimated cost for a separate highway replacement planting project with planting, irrigation, and three-year plant establishment period is \$575,000. Landscape construction is planned for the 2010/11 fiscal year following the completion of the roadway improvements.

### **1.5.3 Proposed Drainage Improvements**

Preliminary drainage design requires one additional outfall to Washington Creek, which would be located in the northeast quadrant of the interchange. Based on soil investigations, footings on piles are proposed to support the retaining wall that would be constructed along East Washington Street. This wall is necessary to construct the right-turn channelization for traffic movement from westbound East Washington Street to northbound diagonal on-ramp.

An ESA would be designated along the top of bank on both sides of Washington Creek in the northeast quadrant of the interchange. Caltrans treatment BMPs would be followed to ensure that no building materials would fall into the creek during construction of the new northbound on-ramp bridge. This work would be conducted during the lowest flows of the year.

A new 1.5-foot (450-millimeter [mm]) drainage system will be constructed to accommodate the runoff from the new northbound 101 on-ramp. This system will tie into a new 2.0-foot (600-mm) outfall to the Washington Creek, situated south of the mainline and immediately north of the proposed bridge that would span the creek. The runoff from the strip mall adjacent to the new on-ramp will be collected in a 1.5-foot (450-mm) drainage system located along the ROW line and connects to the 2.0-foot (600-mm) outfall at Washington Creek. The 2.0-foot (600-mm) outfall replaces the outfall of the existing roadside ditch to Washington Creek currently occupying this location. Drainage north of the new on-ramp will continue to utilize a portion of the existing ditch that drains into Lynch Creek.

A biofiltration strip is proposed along southbound 101 between the ROW and the edge of shoulder from just north of Caulfield Lane to the entrance of the southbound on-ramp from East Washington Street. The biofiltration strip will treat a quantity of stormwater equivalent to approximately 5.7 acres (2.3 hectares) of impervious area. The treated runoff will flow along a drainage ditch that lies to the south along the ROW.

Along East Washington Street, the existing drainage systems will be modified by a combination of extending and replacing existing culverts and inlets and placing new drainage inlets and 1.5-foot (450-mm) culverts.

To minimize impacts to Washington Creek, the following BMPs would be incorporated into the Project:





- Any in-channel work will be constructed between June 15 and October 15 to prevent sedimentation of the stream
- Removal and disturbance of riparian vegetation will be minimized and avoided to the fullest extent possible
- A Storm Water Pollution Prevention Plan (SWPPP) will be incorporated and implemented by the contractor to prevent sedimentation of the stream channel and protect water quality
- All affected trees within the Project area will be trimmed to International Society of Arboriculture (ISA) standards to ensure proper growth and vigor upon Project completion.

#### **1.5.4 Construction Scenario**

Construction of the proposed Project would occur in three stages over approximately 15 months. Staging of construction equipment would occur in various locations within the ROW, but outside of designated ESAs. ESAs would be delineated with an ESA fence to be installed along Washington Creek from top of bank to top of bank within the Project area. Work in the creek bed is not anticipated; however, some work on the bank may need to be conducted for bridge and on-ramp construction.

Construction of the proposed Project would require the relocation of several utility lines, including sewer, water, gas, electric, cable television, and telephone lines. Existing utility lines would be relocated to new easements outside of the proposed ROW. New easements would consist of a 15-foot (4.6-meter) water and sewer easement and a 10-foot (3.0-meter) easement for gas and electric, telephone, and cable television lines. Pacific Gas and Electric Company (PG&E) utility lines would be relocated prior to Project construction; all other utilities would be relocated as part of construction of the proposed Project.

#### **1.6 Permits and Approvals Needed**

1. U.S. Army Corps of Engineers (USACE) Section 404 Permit
2. Regional Water Quality Control Board Section 401 Permit
3. California Department of Fish and Game (CDFG) Streambed Alteration Agreement
4. State Water Resources Control Board General Permit

## **CHAPTER 2** Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

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Chapter 2 describes resources in the Human, Physical, and Biological Environments within the Project limits and identifies potential environmental impacts from the proposed Project. Cumulative impacts are discussed in Chapter 3. These discussions provide the basis for the responses to the California Environmental Quality Act (CEQA) Checklist Form (Appendix B of this document).

Caltrans is the lead agency for the Project. Caltrans concluded that impacts due to the proposed Project would be minor and a Categorical Exclusion (CE) would be prepared for NEPA compliance; therefore, the determination within this document of an impact's level of significance is made solely within the context of CEQA. Per the Council on Environmental Quality Regulations Implementing NEPA, a CE refers to "a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in adoption of these procedures (Section 1507.3) and for which, therefore, neither an environmental assessment nor an environmental impact statement is required" (40 CFR 1508.4).

As part of the scoping and environmental analysis conducted for the Project, the following environmental resource areas were also considered, but no potential for adverse impacts was identified: population housing, agriculture resources, growth, paleontology, hazards and hazardous materials, land use and planning, mineral resources, public and emergency services, recreation, environmental justice, community impacts, and invasive species. Table 2-1 provides a brief explanation for the "no adverse impact" determination in these subject areas. The remainder of this chapter covers environmental issue areas that require further consideration or discussion.

**Table 2-1 No Adverse Impact Determinations Summary**

<b>Population Housing</b>
The Project does not involve the construction of new housing such that any increase in population would occur within the Project area. Nor would the Project result in the removal and/or relocation of existing housing. No impacts to population or housing would occur.
<b>Mineral Resources</b>
The Project site is not located within an area known to contain mineral resources. Because Project implementation would take place within a previously disturbed area not known to contain important mineral resources, the likelihood that mineral resources would be uncovered during project construction is extremely low.
<b>Agriculture Resources</b>

**Table 2-1 No Adverse Impact Determinations Summary**

<p>The Project will neither convert farmland to non-agricultural use nor conflict with current open space or agriculture land use designations.</p>
<p><b>Hazards and Hazardous Materials</b></p>
<p>The Project will not result in any increased hazards or hazardous materials risks after construction. During the development of Project plans, specifications, and estimate, once the exact location of land to be excavated and structures to be modified is known, detailed soil and asbestos surveys will be conducted by Caltrans Office of Environmental Engineering. Any hazardous materials found will be encased or disposed of in accordance with applicable federal and state regulations.</p>
<p><b>Growth</b></p>
<p>Growth in the Project area is planned for and accommodated by the Sonoma County General Plan and the City of Petaluma General Plan. This Project has been approved for the City of Petaluma and along this portion of Route 101. This Project is consistent with the General Plan. Travel time delay on the mainline will decrease and, thus, would not eliminate barriers to growth. The Project conforms to the local general plans and does not conflict with Sonoma County's and the City of Petaluma's managed growth policies.</p>
<p><b>Paleontology</b></p>
<p>The proposed Project is not anticipated to affect paleontological resources. In the event that paleontological site indicators are unearthed during the course of grading, excavation, and/or trenching, all ground-disturbing work in the vicinity shall cease. Caltrans will contact a qualified professional geologist or paleontologist immediately after the find. The contractor shall not resume construction activities until authorization to proceed is received from Caltrans.</p>
<p><b>Land Use and Planning</b></p>
<p>The Project supports local and regional land use plans by improving access to existing urbanized areas that are planned for future development. It does not involve acquisition of residential or commercial structures and will not alter community interaction patterns.</p>
<p><b>Environmental Justice</b></p>
<p>Noise, air quality, and visual impacts are distributed evenly through the Project area and are not concentrated in any area of minority or low-income residents. The Project itself would not cause disproportionately high and adverse effects on any minority or low-income populations.</p>
<p><b>Public Services</b></p>
<p>The Project will not affect provision of existing public services or measurably increase the need for new or physically altered governmental facilities to maintain acceptable service levels, response times, or other performance objectives for any public service.</p>

**Table 2-1 No Adverse Impact Determinations Summary**

<b>Recreation</b>
Because the Project will not cause a substantial noise level increase (12 dBA or more), it will not directly or indirectly reduce the recreational value of any nearby properties. Because access to adjacent properties remains the same, it will not measurably change the use of existing neighborhood and regional parks or other recreational facilities.
<b>Emergency Services</b>
The proposed Project would have minimal effect on public services and facilities. Following Project construction, emergency vehicle access (police and fire) would be improved as a result of the Project.
<b>Community Impacts</b>
Although the freeway predates most of the residential and commercial development that has filled in, it does not divide any communities. There are no relocations required and no housing is being displaced during this Project.
<b>Invasive Species</b>
The Project will not increase the potential for the presence of invasive species. The potential for construction-introduced invasive species is considered low, and any required fill would be taken from local areas.

## HUMAN ENVIRONMENT

### 2.1 Utilities

#### 2.1.1 Affected Environment

The relocation of existing underground and above-ground utility facilities will occur within a utility easement outside the future State ROW. Caltrans has confirmed the location of the affected utilities, which include gas, electric, telephone, cable TV, sewer, and water. Utility Agreements will be required for relocations by the City of Petaluma, PG&E, SBC, Water Company, and Comcast.

#### 2.1.2 Environmental Consequences

Construction of the proposed Project would require the relocation of several utility lines, including sewer, water, gas and electric, cable television, and telephone lines. Existing utility lines would be relocated to new easements outside of the proposed ROW. New easements would consist of a 15-foot water and sewer easement and a 10-foot easement for gas and electric lines, telephone, and cable television lines. PG&E utility lines would be relocated prior to Project construction; all other utilities would be relocated as part of construction of the proposed Project.

The relocation of PG& E utility lines would require the relocation and replacement of two wood poles with two tubular steel poles on the Lakeville - Petaluma “C” 60 kilovolt electric transmission line. One tubular steel pole would be approximately fifteen higher than the existing wood pole and the other tubular steel pole would be approximately twenty feet higher than the existing wood pole. The new tubular steel poles would be located within an existing grant of easement to PG&E. The relocation of the existing pole line would be temporary and would not result in any interruption of service.

**2.1.3 Avoidance and/or Minimization Measures**

None are required.

**2.2 Traffic**

In an earlier assessment of potential improvements at the Project location, a preliminary traffic modeling and assessment was performed by Caltrans District 3 staff. This analysis was then updated to reflect the final layout of the Project ramps and intersection improvements.

SYNCHRO 5.0 was used to build the traffic models. The Base Year model was calibrated to replicate existing conditions based on observed conditions and traffic counts. Models of future scenarios use the Base Year model as a template with proposed volume changes and geometric improvements incorporated. SYNCHRO is primarily a signal optimization program. SimTraffic was also used to simulate the SYNCHRO models and create an animated view of the network operations.

“Level of Service” is commonly used to describe the traffic operation at signalized intersections. The 2000 Highway Capacity Manual defines levels of service for signalized intersections in terms of control delay, as described in Table 2-2.

Table 2-2 Signalized Intersection Levels of Service	
Level of Service	Control Delay (sec/vehicle)
A	≤10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

**2.2.1 Affected Environment**

In the vicinity of the proposed Project, Route 101 consists of a four-lane highway mainline, with two northbound and two southbound lanes. The existing on- and off-ramps to Route 101 along this stretch of highway feeds traffic to and from the mainline of Route 101 onto East Washington Street, a local four-lane roadway.

A new diagonal on-ramp would be constructed requiring a new bridge over Washington Creek, which would allow for the widening of the on-ramps and increase the amount of available storage. The existing northbound on/off-ramps traffic signal at East Washington Street would be upgraded and lanes restriped to improve the traffic flow in the vicinity of East Washington Street and the on/off-ramps.

### **2.2.2 Environmental Consequences**

Traffic impacts associated with the proposed Project have been assessed as a function of operating conditions during peak period conditions on the freeway and local intersections within the Project vicinity. Traffic flow analysis conducted in conjunction with Project design indicates that the Project would reduce congestion.

The traffic impact studies analyzed a network consisting of three intersections on East Washington Street: the southbound Route 101 off-ramp, northbound Route 101 off-ramp, and McDowell Boulevard intersections. Year 2030 AM and PM peak hour traffic projections with the proposed Project were used for this study. (Note that traffic projections indicate that the PM peak hour traffic volume of the northbound on-ramp[s], for example, is about 25 percent lower without the proposed Project. It is not anticipated that the relatively modest improvements in this interchange would have significant impact on the on-ramp volume, so the heavier of the two on-ramp traffic projections was used for both alternatives for this study.)

It is anticipated that the proposed Project would not have an adverse impact on overall traffic operations, based on current traffic projections. The expected impacts of the proposed modifications are described in the following paragraphs.

The westbound East Washington street left turn to the northbound freeway on-ramp would be eliminated. This modification would allow the northbound ramps/East Washington Street intersection to operate with a two-phase – instead of a three-phase – traffic signal. This would provide more efficient signal operation and allow for more signal green time to be assigned to the remaining intersection traffic movements.

Elimination of the westbound East Washington Street left turn to the northbound freeway on-ramp would also allow the two left-turn lanes on eastbound East Washington Street at the McDowell Boulevard intersection to be lengthened. This would provide more capacity for the left-turn movement at the McDowell Boulevard intersection.

The proposed improvements would reduce or eliminate the probability that northbound off-ramp traffic backups would extend onto the freeway. Year 2030 peak hour traffic operations were modeled using the SimTraffic program. Some simulations showed a substantial backup onto the freeway without the proposed Project during the PM peak hour, but no backup onto the freeway with the proposed Project. The SimTraffic program is only an approximation, and should only be taken as an indicator of potential conditions. The possibility of a backup onto the freeway would depend on the amount of signal green time provided to clear the off-ramp movement, which could be based on factors other than traffic volumes. However, simplification of the northbound Route 101 off-ramp/



East Washington Street intersection is expected to allow more time for the off-ramp movement, and backups onto the freeway would be less likely to occur with the proposed Project.

It is not anticipated that the second northbound on-ramp would have an adverse impact on freeway traffic operations. Traffic projections indicate that, in 2030, the mixed-flow lanes of northbound Route 101 would be operating close to capacity (4,100 vehicles per hour in the mixed-flow lanes; 1,000 vehicles/hour in the HOV lane) downstream of the East Washington Street on-ramp(s) during the PM peak hour. During this time, it is projected that the two on-ramp lanes would carry a total of about 1,000 vehicles per hour. If only one on-ramp was in service, there is a possibility that “platooned” on-ramp vehicles could cause intermittent congestion problems at the merge of northbound Route 101 and the on-ramp. If two on-ramps were provided, on-ramp platoons would be smaller, and the possibility of intermittent congestion problems would be lessened.

Analysis of year 2030 AM and PM peak hour traffic volumes shows that, if traffic growth occurred as projected, East Washington Street would experience heavy traffic congestion during AM and PM peak hours in 2030. During the AM peak hour, the southbound off-ramp/East Washington Street intersection would be operating at capacity, and the McDowell Boulevard/East Washington Street intersection would be operating within 10 percent of capacity. During the PM peak hour, the projected peak hour vehicle demand at both of these intersections would be between 15 and 20 percent above the intersection capacities, and traffic would experience substantial congestion.

An analysis of intersection traffic operations using the analysis program SYNCHRO shows that the northbound Route 101 off-ramp/East Washington Street intersection would operate below capacity during the AM peak hour. During the PM peak hour, the analysis indicates that the northbound ramps intersection would itself operate at or near capacity if the proposed improvements were not provided, but could operate 75 to 80 percent of capacity if the proposed improvements were provided. The actual operation of this intersection would depend on the signal phasing and coordination with adjacent intersections; however, the northbound ramps intersection would likely experience peak hour traffic congestion in 2030 due to traffic backups extending into this intersection from adjacent intersections. Table 2-3 shows the results of the intersection analysis of the proposed Project.

**Table 2-3 Year 2030 Levels of Service**

Intersection Location	Year 2030 Level of Service			
	AM Peak Hour		PM Peak Hour	
	No Project	Project	No Project	Project
East Washington St./McDowell Blvd.	E	E	F	F
East Washington St./NB Ramps	D	B	F	D
East Washington St./SB ramps	F	F	F	F

### **2.2.3 Avoidance, Minimization, and/or Mitigation Measures**

The proposed Project is projected to produce a beneficial impact on traffic conditions. No significant negative impacts are identified; therefore, no avoidance and/or minimization measures are required.

## **2.3 Visual Aesthetics**

Visual impacts of the proposed Project were evaluated in accordance with the FHWA Visual Impact Assessment (VIA) methodology (ASLA/FHWA, 1988).—The assessment of existing visual quality of the Project setting was based on three criteria defined in that methodology: vividness, intactness, and unity. Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns. Intactness is the visual integrity of the natural or man-made landscape of the immediate environs and its freedom from encroaching elements. Unity is the degree to which the visual elements of the landscape join together to form a coherent, harmonious visual pattern.

### **2.3.1 Affected Environment**

The Project is situated within a single landscape unit, comprising the level, rapidly urbanizing valley floor of the City of Petaluma, which is the southernmost of a string of low-lying valleys that extend northward past the City of Santa Rosa along the Highway 101 corridor. Figure 2.3-1 is an overview of the immediate proposed Project setting, consisting of the highway segment in the vicinity of the East Washington Street Interchange. This segment of the highway corridor crosses some of the more urbanized portions of Petaluma, and is not designated or considered to be eligible as a State Scenic Highway. Adjacent land uses consist primarily of commercial, light industrial, and residential areas abutting the highway, and also include the Marin-Sonoma County Fairgrounds and a vacant lot. The Project corridor is currently characterized by tall (65 feet [20 meters] or more), dense roadside tree hedgerows, primarily eucalyptus and redwoods. These tend to enclose and restrict views to within the roadway, provide strong visual separation between the road and adjacent land uses, and lend a vivid, recognizable image to the approaches to the interchange, a principal City entry gateway (see Figure 2.3-2a, Project Setting Photos). These hedgerows line the entire Project segment on both shoulders, including the ramp shoulders at the East Washington Interchange.

As typical in the Route 101 corridor throughout Sonoma County, redwood trees at the highway shoulder are an important component of the regional visual image. Many of the redwoods within the Project limits, however, particularly on the west shoulder of the highway, are stressed, disfigured, and appear to be dying or in very poor condition; only the eucalyptus appear healthy. Visible major vegetation outside of the highway ROW in this segment is negligible. Freeway over-crossings at Caulfield Lane, East Washington Street, and Corona Road punctuate views from the road but remain subordinate to the tall, visually dominant tree rows. Scenic views are absent in this highway segment, with views constrained to within the roadway itself by the enclosing tree hedgerows (see Figure 2.3-2b).

The existing highway within the Project limits is a four-lane roadway with unpaved center median separated by metal beam guardrail. In addition to the East Washington Street over-crossing bridge, the East Washington Interchange includes earth embankments with substantial landscaping, including stands of young redwood trees that appear healthy, and a large stand of mature poplars in the

northeastern corner of the interchange. The low-lying portions of the interchange loops are landscaped with lower-growing shrubs (see Figure 2.3-2c).

Potentially sensitive visual receptors in the Project area include very high numbers of motorists on Route 101 and East Washington Street with moderate overall levels of anticipated viewer sensitivity and a moderate number of homes directly adjoining the roadway in the northwest and southeast quadrants with potentially high levels of anticipated viewer sensitivity. Land uses adjoining the proposed on-ramps in the northeast and southwest Project quadrants are predominantly of low visual sensitivity, consisting of a vacant lot in the southwest and loading docks in the northeast. However, a senior apartment complex adjoining the road in the northeast quadrant south of Lynch Creek is of potentially high viewer sensitivity.

### **2.3.2 Environmental Consequences**

Impacts were assessed according to FHWA methodology and criteria presented in Appendix G of the CEQA Guidelines. Under the VIA methodology, a substantial decline in visual quality (vividness, intactness, and unity) in combination with high levels of viewer sensitivity and exposure have the potential for substantially adverse results. Appendix G of the CEQA Guidelines lists the following criteria to guide discussion about whether the potential impacts of a Project are potentially significant:

1. Would the Project have a substantial adverse effect on a scenic vista?
2. Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
3. Would the Project substantially degrade the existing visual character or quality of the site and its surroundings?
4. Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

### **Major Project Visual Features**

For the purpose of analysis, the Project is described below in terms of four quadrants, defined by the centerlines of East Washington Street and Route 101 as indicated on Figure 2.3-1.

Under the proposed Project, a new two-lane diagonal northbound on-ramp, including a free-span bridge over Washington Creek, would be constructed east of the existing Project mainline from East Washington Street. This ramp would require two new retaining walls on the highway and community side, respectively. East Washington Street would be widened northeast of the highway to provide a right turn lane for traffic between westbound East Washington Street and northbound Route 101, requiring a new retaining wall to the north of East Washington Street.

The existing single-lane southbound on-ramp would be realigned to improve the curve radius and provide two lanes to accommodate ramp metering. A new concrete-lined and unlined drainage ditch and parallel biostrip would be required along the length of the southwest Project quadrant.



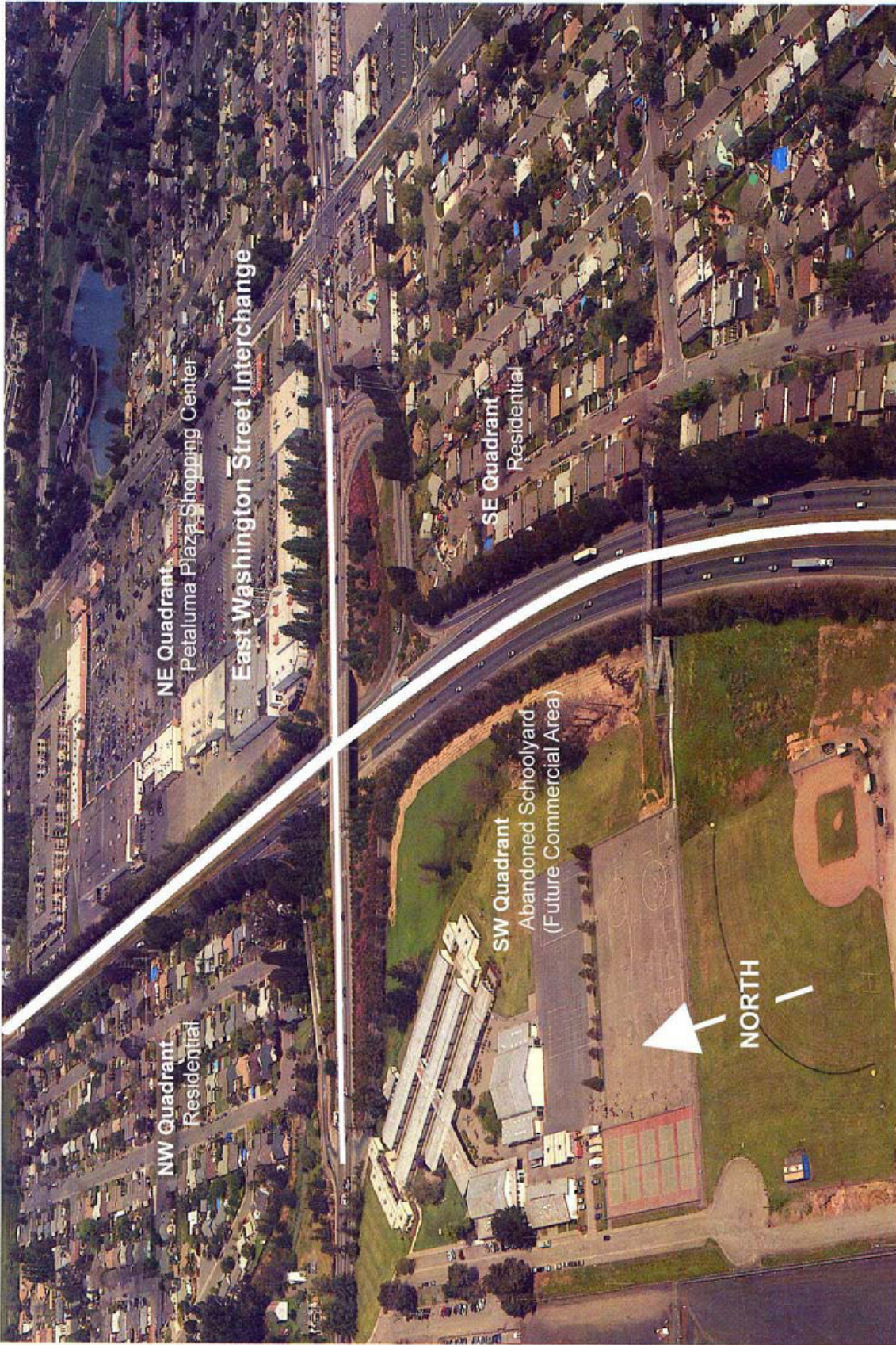


Figure 2.3-1 Aerial Overview of Project Setting



**Figure 2.3-2 Project Setting Photos**

a. Existing facility with redwood and eucalyptus hedgerows



b. Typical stressed redwoods on west highway shoulder



c. Existing interchange and landscaping



Existing underground utilities in the northeast quadrant would be relocated to a utility easement outside of and adjacent to the future State ROW.

### **Impacts to Motorists and Community Image**

Impacts to motorists and the community in views from the roadway would include a substantial decline in visual quality of the corridor due to removal of nearly all of the approximately 592 existing redwood and other trees at the highway shoulders in the northeast and southwest Project quadrants (approximately 780 trees total). Removal of the existing tree hedgerows would result in a marked decline in vividness, intactness, and unity of the setting, transforming the existing forward-directed, enclosed views dominated by tree canopy to more open views of the vacant lot in the southwest Project quadrant, retail development on that site proposed in the near future, and loading docks of the adjacent Petaluma Plaza Shopping Center in the northeast quadrant. The new northbound on-ramp would introduce a tall retaining wall into the visual foreground of the freeway in the northeast quadrant, with a resulting increase in the dominance of hardscape in the interchange vicinity, and corresponding decline in visual quality.

Figure 2.3-3 depicts anticipated Project effects in the southwest Project quadrant, including the widened, realigned southbound on-ramp, as seen from the vicinity of the East Washington Interchange northbound off-ramp, looking south.

Ramp widening, realignment, and creation of a new drainage system in the southwest quadrant would require removal of the existing, unhealthy redwood trees west of the highway and on-ramp. These roadway improvements would result in a decline in vividness and intactness of the interchange vicinity viewscape through loss of tree canopy, which screens the adjacent property. Tree screening in this quadrant consists entirely of redwoods, which are in poor health. As a result, the visual quality of the existing tree rows is relatively poor, as depicted on Figure 2.3-2b. It appears likely that this loss of screening would also result, in time, without the proposed Project because of unsuitable growing conditions for the existing redwoods. The exposed property, currently a vacant lot, is proposed for retail use in the near future. Adverse effects of tree removal would be partially offset by planting vines on chain-link fence at the ROW, and tall shrubs, where feasible, between a proposed 10-foot (3-meter) biostrip and 6.5-foot (2-meter), lined drainage ditch, as recommended in the protective measures described below and depicted in the visual simulation (Figure 2.3-3) and Typical Cross Section in Southwest Project Quadrant (Figure 2.3-4). With this measure, screening of the adjacent site, and a degree of visual intactness and unity, would be restored in a relatively short period of time with maturation of shrub plantings.

Figure 2.3-5 depicts the proposed northbound on-ramp in the northeast Project quadrant, as seen from the East Washington Street Interchange bridge, looking north.

In the northeast Project quadrant, removal of existing tree rows to accommodate the proposed northbound on-ramp would represent a substantial decline in the visual quality of highway views. The trees in this quadrant consist primarily of redwood, but in better health than in the southwest quadrant. Tree removal would represent a substantial decline in intactness and vividness from loss of the tree canopy, as well as exposure of unattractive loading docks, storage areas, and parking of the Petaluma

Existing View



Simulated View



**Figure 2.3-3 Existing and Simulated Views of Southwest Project Quadrant, Looking South**



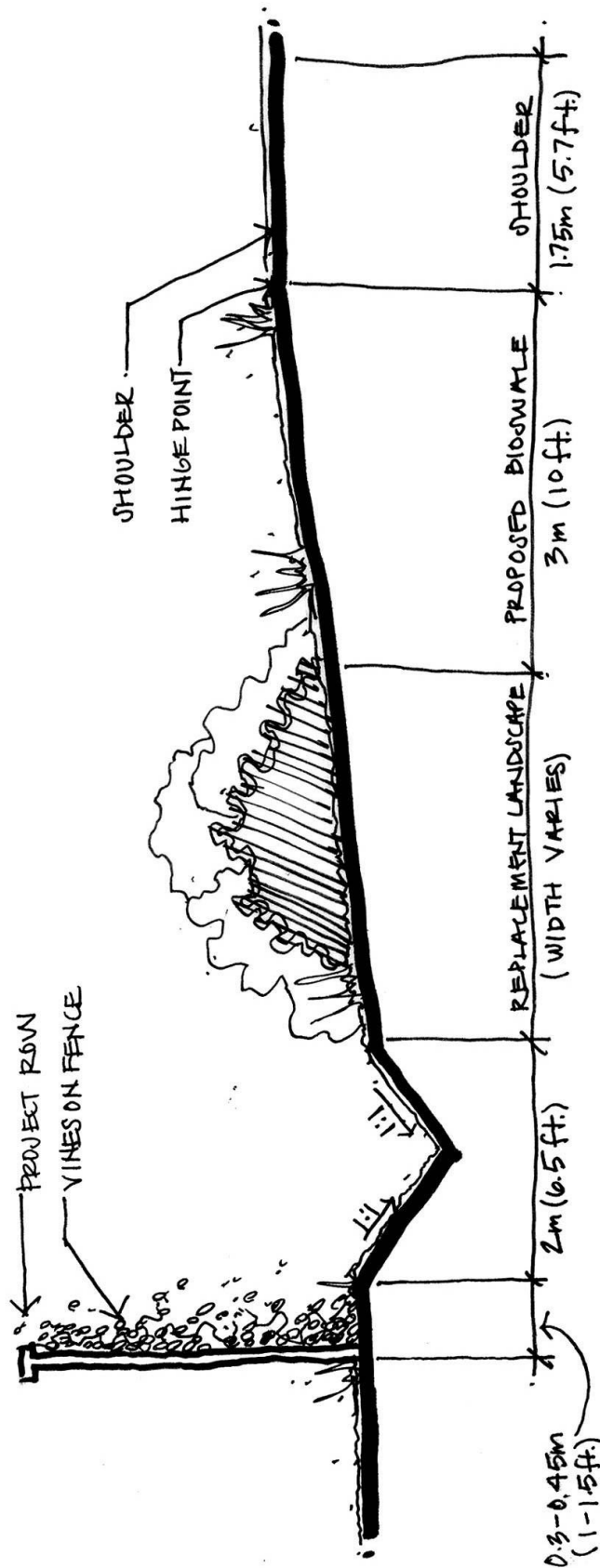


Figure 2.3-4 Typical Cross Section in Southwest Project Quadrant

Plaza Shopping Center into the immediate visual foreground of motorists on the new on-ramp, and on portions of the highway mainline in the area where the ramp merges.

The west side of the new northbound on-ramp would introduce a tall retaining wall into the visual foreground of the freeway, with a resulting increase in the dominance of hardscape and some decline in visual quality in the interchange vicinity. However, as also depicted on Figure 2.3-5, decorative texture treatment would reduce visual monotony and contrast of the wall in the short term, and recommended landscaping between the ramp and highway shoulder would substantially screen and soften the wall with maturation of the plantings. A similar new retaining wall on the community (east) side of the new on-ramp would face existing loading docks and similar low-sensitivity uses and would thus have negligible impact on views toward the road. Within the East Washington Interchange, construction of the proposed westbound to Route 101 northbound turn lane on East Washington Street would require a new retaining wall on the north side of the street. It currently appears that the adjacent stand of poplar trees could be preserved during wall construction. If their preservation proves infeasible, this tree removal would result in a further adverse decline in visual quality at the interchange.

Overall, the effect of the proposed Project on community image and views of motorists would, without mitigation, be a transformation from the existing visual setting dominated by tall tree rows at the shoulder to one dominated to a greater degree by hardscape – increased paving and ramps – and open, unsightly views of loading docks, a vacant lot, and potential additional future loading docks. The resulting decline in visual quality would be potentially substantial. However, loss of the highly compromised redwoods in the southwest quadrant would represent a moderate overall decline in visual quality, considering their poor existing condition, and the substantial remaining tree rows in the northwest and southeast Project quadrants would continue to dominate the community image of the interchange vicinity, particularly in the north- and southbound approaches to the interchange, because of their great size, prominence, and vividness. With mitigation measures as described below, Project impacts to community image and views from the road, though adverse, would remain less than significant.

### **Impacts on Views to the Road**

Nearby residents adjoining the highway in the northwest and southeast quadrants would be unaffected by the proposed Project. Adjoining uses in the northeast and southwest quadrants are predominantly of low or negligible visual sensitivity. In the northeast quadrant, adjoining uses consist primarily of loading docks and employee parking of the Petaluma Plaza Shopping Center. In the southwest quadrant, adjoining land use consists of a vacant lot, with no sensitive viewers.

Figure 2.3-6 depicts the existing view of the highway from the Vintage Chateau Apartments south of Lynch Creek in the northeast Project quadrant. North of the proposed new northbound on-ramp, outside shoulder widening would be required to accommodate a ramp merging lane and anticipated future bridge widening at Lynch Creek. West-facing apartments of the two-story Vintage Chateau retirement community in that road segment are potentially sensitive visual receptors, with windows and outdoor use areas facing the freeway at close distance. Removal of existing redwood trees in that location would potentially result in a substantial decline in visual quality for residential viewers with moderately high viewer sensitivity. Foreground views of tall redwood canopies would be replaced by

Existing View



Simulated View



**Figure 2.3-5 Existing and Simulated Views of Northeast Project Quadrant, As Seen from the East Washington Street Interchange Bridge Looking North**



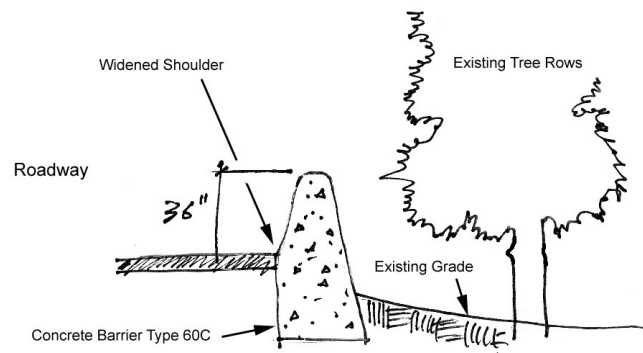
Apartments South of Lynch Creek,  
Looking West Toward Freeway, Redwood  
Trees.



Apartments South of Lynch Creek,  
Looking South. Freeway Right-of-Way,  
Redwood Trees Are on Right.



Recommended Mitigation Measure  
VM-7: Typical Section at Vintage Chateau  
Apartments.



**Figure 2.3-6 View of Highway from Vintage Chateau Apartments**

fully exposed views of the adjacent freeway. Further, redwood trees in this location are tall, mature, and appear healthy. To avoid removing existing redwood trees and resulting exposure of apartments to highway views, a concrete shoulder barrier is recommended to retain the widened roadway in this location, as depicted on Figure 2.3-6, Recommended Mitigation Measure VM-7: Typical Section at Vintage Chateau Apartments.

As set forth in Mitigation Measure VM-7, if preservation of the existing redwoods proves infeasible, in-kind tree replacement at the shoulder utilizing large container plant material would occur. With preservation of the trees, Project impacts to residents would be negligible; however, if preservation of the existing redwoods is not possible, their removal would result in adverse short-term visual impacts. In the long term (10 to 20 years), project impacts would be reduced to a less-than-significant level with implementation of replacement planting and impacts to residents at the apartments would remain less-than-significant overall.

### **Light and Glare Impacts**

Potential Project-related light and glare impacts would be associated primarily with temporary nighttime construction lighting in proximity to sensitive receptors, including motorists, pedestrians, and nearby residences. However, with implementation of recommended control measures for construction lighting as described below, no substantial light and glare impacts are anticipated.

Removal of existing tree screening along the proposed northbound on-ramp could result in some exposure of adjacent apartments to long-term car headlight glare, with potentially substantial adverse impacts to residents. To minimize this potential impact, permanent opaque screening shall be installed at the highway ROW to block all such glare under Mitigation Measure VM-8.

### **2.3.3 Avoidance, Minimization, and Mitigation Measures**

#### **Mitigation Measure 2.3-1: Replacement Landscaping in Southwest Quadrant between Proposed Biostrip and Drainage Ditch**

In the southwest quadrant of the Project, including southbound on-ramp, tall shrubs shall be planted to the maximum feasible extent within available planting areas between the proposed biostrip and drainage ditch. New vines shall also be planted on chain link fence at the Project ROW line.

#### **Mitigation Measure 2.3-2: Enhanced Redwood Planting on Interchange Embankments; Enhanced Redwood Planting in Offsite Locations**

To partially offset impacts from the loss of trees in the Project corridor, additional new tree plantings shall be installed on the earth embankments within the interchange, particularly near the mainline, consistent with required standard sight lines and other safety considerations. In addition, a range of new tree groupings shall be planted within the highway ROW in other portions of Route 101 where such plantings are feasible consistent with standard safety considerations including, but not limited to, portions of the highway ROW between Lynch Creek and Corona Road. In the long term, these groupings would provide an enhanced City gateway statement at the interchange, and partially compensate for the loss of large-scale vegetation elsewhere in the Project segment.

### **Mitigation Measure 2.3-3: Northbound On-ramp Retaining Wall Mitigation Measures**

Design measures shall be applied to northbound on-ramp retaining walls. Caltrans will coordinate development of these measures with the City of Petaluma. Such measures may include concrete surface texture and color treatments, context-sensitive design themes, or other measures to enhance corridor visual quality. Structure design measures shall be designed to maintain visual and design consistency within the Project limits, and an awareness of, and cohesion with, existing and proposed visual and design themes within the larger Marin and Sonoma County 101 corridor.

To offset potential impacts from intrusion of the new northbound on-ramp, landscaping between the ramp and roadway shall be installed to screen the west-facing retaining wall in the long term.

### **Mitigation Measure 2.3-4: Visual Screening of Shopping Center Loading Docks**

On the east edge of the proposed northbound on-ramp, where tree removal exposes views of adjoining commercial uses to the highway, visually opaque barriers consisting of 3-foot (1-m) black-vinyl-clad chain link fence with brown slats shall be constructed atop the east ramp retaining wall to visually screen views of motorists into adjoining properties. Vines shall also be planted at the ROW line if feasible.

### **Mitigation Measure 2.3-5: Minimization of Tree Removal in Interchange and on East Washington Street**

To enable preservation of poplars and other trees to the greatest feasible extent, the following measures are proposed:

- Clearing and grubbing within the interchange will be limited to excavation on embankment slope lines
- Existing vegetation outside of clearing and grubbing limits shall be protected from the contractor's operations, equipment, and materials storage
- Tree trimming by the contractor shall be limited to that required to provide a clear work area
- Prior to commencement of roadway construction, high-visibility protective fencing shall be placed around trees that are not subject to removal
- All trees to be removed shall be field-marked for removal by the contractor and verified/approved by the resident engineer prior to removal
- Wherever feasible, slope lines shall be adjusted to avoid tree removal.

### **Mitigation Measure 2.3-6: Replacement Planting Within Interchange**

If preservation of poplars at East Washington Street proves infeasible, replacement planting shall be installed north of the wall on a 1-to-1 basis or greater, using 24-box plant material. Replacement

planting with redwood is recommended to enhance the redwood image of the interchange, in coordination with measure VM-2.

### **Mitigation Measure 2.3-7: Preservation of Existing Trees, or Replacement Planting at Frontage of Apartments in Northeast Quadrant**

North of the point where the proposed northbound on-ramp merges with the highway mainline, proposed road widening shall utilize a Type 60C concrete barrier to retain the widened road edge to preserve existing redwood trees at the frontage of adjoining apartments. If removal of any trees in this segment is unavoidable, they shall be replaced in-kind with 24-inch container plant material.

### **Mitigation Measure 2.3-8: Mitigation of Construction-related Light and Glare Impacts**

All nighttime construction lighting shall be shielded and directed to eliminate all direct lighting outside of the construction area. Where substantial headlight glare could affect residences during construction, opaque screening shall be introduced to block such headlight glare for the duration of the construction period. If headlight glare could affect residents at apartments on a long-term basis, permanent screening shall be installed at the highway ROW to block headlight glare.

With these recommended mitigation measures, Project impacts, though adverse, would be reduced to less than significant levels in the long term with maturation of replacement landscape plantings.

## **2.4 Air Quality**

### **2.4.1 Regulatory Setting (National Ambient Air Quality Standards and Regional Conformity)**

The Clean Air Act (CAA) as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act (CCAA) of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six criteria pollutants that have been linked to potential health concerns. The criteria pollutants are carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter, lead, and sulfur dioxide (SO<sub>2</sub>). The federal and state ambient air quality standards are shown in Table 2.4-1.

Under the 1990 CAA Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to State Implementation Plan (SIP) for achieving the goals of the CAA requirements. Conformity with the CAA takes place on two levels: first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.



Table 2.4-1

Ambient Air Quality Standards and Bay Area Attainment Status

		California Standards <sup>a</sup>		National Standards <sup>b</sup>	
Pollutant	Averaging Time	Concentration		Concentration <sup>c</sup>	Attainment Status
Ozone	8 Hour	0.070 ppm (137 µg/m <sup>3</sup> )	U <sup>d</sup>	0.08 ppm	N <sup>e</sup>
	1 Hour	0.09 ppm (180 µg/m <sup>3</sup> )	N		f
Carbon Monoxide	8 Hour	9.0 ppm (10 mg/m <sup>3</sup> )	A	9 ppm (10 mg/m <sup>3</sup> )	A <sup>g</sup>
	1 Hour	20 ppm (23 mg/m <sup>3</sup> )	A	35 ppm (40 mg/m <sup>3</sup> )	A
Nitrogen Dioxide	Annual Average			0.053 ppm (100 µg/m <sup>3</sup> )	A
	1 Hour	0.25 ppm (470 µg/m <sup>3</sup> )	A		
Sulfur Dioxide	Annual Average			80 µg/m <sup>3</sup> (0.03 ppm)	A
	24 Hour	0.04 ppm (105 µg/m <sup>3</sup> )	A	0.14 ppm (365 µg/m <sup>3</sup> )	A
	1 Hour	0.25 ppm (655 µg/m <sup>3</sup> )	A		
Particulate Matter (PM <sub>10</sub> )	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	N <sup>h</sup>	50 µg/m <sup>3</sup>	A
	24 Hour	50 µg/m <sup>3</sup>	N	150 µg/m <sup>3</sup>	U
Particulate Matter (PM <sub>2.5</sub> )	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	N <sup>h</sup>	15 µg/m <sup>3</sup>	A
	24 Hour			35 µg/m <sup>3i</sup>	U
Sulfates	24 Hour	25 µg/m <sup>3</sup>	A		
Lead	Calendar Quarter			1.5 µg/m <sup>3</sup>	A
	30 Day Average	1.5 µg/m <sup>3</sup>	A		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m <sup>3</sup> )	U		
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm (26 µg/m <sup>3</sup> )			
Visibility Reducing Particles	8 Hour (1000 to 1800 PST)	See footnote J	A		

A	=	Attainment
N	=	Nonattainment
U	=	Unclassified
mg/m <sup>3</sup>	=	milligrams per cubic meter
µg/m <sup>3</sup>	=	micrograms per cubic meter
ppm	=	parts per million

Source: Bay Area Air Quality Management District (BAAQMD) internet site, 1/4/2007

Notes:

<sup>a</sup>California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter (PM<sub>10</sub>), and visibility-reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average (i.e., all standards except for lead and the PM<sub>10</sub> annual standard), then some measurements may be excluded. In particular, measurements are excluded that the California Air Resources Board determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the State standard.

<sup>b</sup>National standards other than for ozone, particulates, and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the three-year average of the fourth highest daily concentrations is 0.08 ppm or less. The 24-hour PM<sub>10</sub> standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than 150 µg/m<sup>3</sup>. The 24-hour PM<sub>2.5</sub> standard is attained when the three-year average of 98th percentiles is less than 65 µg/m<sup>3</sup>. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM<sub>10</sub> is met if the three-year average falls below the standard at every site. The annual PM<sub>2.5</sub> standard is met if the three-year average of annual averages spatially averaged across officially designed clusters of sites falls below the standard.

<sup>c</sup>National air quality standards are set at levels determined to be protective of public health with an adequate margin of safety. Each state must attain these standards no later than 3 years after that state's implementation plan is approved by the Environmental Protection Agency (U.S. EPA).

<sup>d</sup>This standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.

<sup>e</sup>In June 2004, the Bay Area was designated as a marginal nonattainment area of the national 8-hour O<sub>3</sub> standard.

<sup>f</sup>The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.

<sup>g</sup>In April 1998, the Bay Area was redesignated to attainment for the national 8-hour CO standard.

<sup>h</sup>In June 2002, CARB established new annual standards for PM<sub>2.5</sub> and PM<sub>10</sub>.

<sup>i</sup>U.S. EPA lowered the 24-hour PM<sub>2.5</sub> standard from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup> in 2006. The EPA is required to designate the attainment status of BAAQMD for the new standard by December 2009.

<sup>j</sup>Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Regional level conformity in California is concerned with how well the region is meeting the standards set for CO, NO<sub>2</sub>, O<sub>3</sub>, and particulate matter. California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans (RTP) are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the RTP, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that CAA attainment requirements for CO, NO<sub>2</sub>, O<sub>3</sub> and particulate matter are met. If the conformity analysis is successful, the regional planning organization, such as the Metropolitan Transportation Commission

(MTC) and the FHWA, make the determination that the RTP is in conformity with the SIP for achieving the CAA goals. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements of project-level analysis. The MTC prepares and adopts the TIP every 2 years. The proposed project was included in the most recent TIP (2005), and approved by the FHWA on October 1, 2004. On February 23, 2005, the MTC issued a final transportation conformity finding for the Transportation 2030 Plan and the 2005 TIP/Amendment #05-05. The FHWA approved this conformity finding on March 17, 2005. Because the design concept and scope of the Project have not changed, the project conforms to the SIP.

### **Mobile Source Air Toxics**

In addition to the criteria air pollutants for which there are NAAQS, U.S. EPA also regulates a list of air toxics (64 Federal Register [FR] 38706). Air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), air sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics identified by the U.S. EPA. MSATs are emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as by-products. Metal air toxics result from engine wear or from impurities in oil or gasoline.

The U.S. EPA is the lead federal agency for administering the CAA and has certain responsibilities regarding the health effects of MSATs. The U.S. EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources 66 FR 17229 (March 29, 2001). This rule was issued under the authority of CAA Section 202.

In its rule, U.S. EPA also examined the impacts of existing and newly formulated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulphur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in nationwide VMT, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 to 65 percent, and will reduce on-highway diesel particulate matter emissions by 87 percent.

In 1998, California identified diesel particulate matter (diesel PM) as a toxic air contaminant based on its potential to cause cancer and other adverse health impacts. In addition, to diesel PM, emissions from diesel-fueled engines include over 40 other cancer causing substances. In September 2000, the CARB approved a comprehensive Diesel Risk Reduction Plan (Plan) to reduce diesel PM emissions and the associated health risk by 75 percent in 2010 and 85 percent or more by 2020.

## 2.4.2 Affected Environment

### Climate

The Bay Area is characterized by cool, dry summers and mild, wet winters. Temperature in the project area and its vicinity averages approximately 58 degrees Fahrenheit annually, with an average maximum summer temperature of approximately 82 degrees Fahrenheit and an average minimum winter temperature of approximately 38 degrees Fahrenheit. The Eastern Pacific High, which is a strong persistent anticyclone, is the major influence on the climate in the area. The area experiences little precipitation during the summer months, when a high-pressure cell prevents storms from affecting the California coast. During the winter, the high-pressure cell weakens and shifts southward. Storms occur more frequently and winds are usually moderate.

### Existing Air Quality

Low wind speeds and temperature inversions contribute to the buildup of air pollution. Low wind speed contributes to the buildup of air pollution because it allows more pollutants to accumulate in the air within a period of time. The highest air pollutant concentrations in the Bay Area generally occur during inversions, when temperature increase as altitude increases, thereby preventing air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. Under the CCAA, the Sonoma County portion of the Bay Area Air Basin is designated as a non-attainment area for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. Under the CAA, the Sonoma County portion of the Bay Area Air Basin is designated as a non-attainment area for O<sub>3</sub> as shown in Table 2.4-1.

Carbon Monoxide: CO is almost exclusively emitted by motor vehicles. This pollutant binds the oxygen-carrying protein in blood to hemoglobin, reducing the amount of oxygen reaching the heart and brain. Exposure to CO, even at low levels, can endanger people with coronary artery disease. It can also cause headaches, fatigue, and slow reflexes, even among healthy people.

Typical symptoms experienced by some people where levels of CO substantially exceed state and federal air quality standards are headaches and dizziness.

Violations of the CO standards usually occur in the winter during periods of ground-based weather inversions (i.e., when warm air above traps a layer of cold air beneath, near ground level) with very low wind speed.

The data monitored at the BAAQMD station in Santa Rosa, the nearest station to the project site, show no violations of the federal and state CO standards in the 3 years from 2003 to 2005, as shown in Table 2.4-2.

**Table 2.4-22003 - 2005 Criteria Pollutant Violations: Santa Rosa –  
5th Street Monitoring Station**

Pollutant	Standard Exceedance	2005	2004	2003
Ozone (1 hour)	Maximum 1-hr concentration (ppm)	0.072	0.080	0.100
	Days > 0.12 ppm (federal 1-hr standard)	0	0	0

**Table 2.4-22003 - 2005 Criteria Pollutant Violations: Santa Rosa –  
5th Street Monitoring Station**

Pollutant	Standard Exceedance	2005	2004	2003
	Days > 0.09 ppm (state 1-hr standard)	0	0	1
Ozone (8 hour)	Maximum 8-hr concentration (ppm)	0.051	0.060	0.080
	Days > 0.08 ppm (federal 8-hr standard)	0	0	0
Carbon Monoxide	Maximum 8-hr concentration (ppm)	2.0	1.60	1.80
	Days > 9 ppm (federal 8-hr standard)	0	0	0
	Days > 9.0 ppm (state 8-hr standard)	0	0	0
Nitrogen Dioxide	Maximum 1-hr concentration (ppm)	0.047	0.050	0.060
	Days > 0.25 ppm (state 1-hr standard)	0	0	0
PM <sub>2.5</sub>	Maximum 24-hr concentration (µg/m <sup>3</sup> )	33.6	27.0	39.0
	Days > 65 µg/m <sup>3</sup> (federal 24-hr standard)	0	0	0
PM <sub>10</sub>	Maximum 24-hr concentration (µg/m <sup>3</sup> )	39.0	48.0	36.0
	Estimated days > 150 µg/m <sup>3</sup> (federal 24-hr standard)	0	0	0
	Estimated days > 50 µg/m <sup>3</sup> (state 24-hr standard)	0	0	0
Source: California Air Resources Board, January 4, 2007.				

Ozone: O<sub>3</sub> is the primary constituent of photochemical smog. It is not emitted directly into the atmosphere, but is produced through a complex series of chemical reactions involving hydrocarbons and oxides of nitrogen (NO<sub>x</sub>), in the presence of sunlight. Vehicle exhaust emissions contribute about half of the pollutants that form ozone. High ozone levels occur primarily in the summer and early fall. High O<sub>3</sub> levels aggravate asthma, bronchitis, and other respiratory ailments, as well as cardiovascular disease. High concentrations of O<sub>3</sub> may also cause dizziness, headaches, burning of eyes and throat, and nausea.

The general structure of oxidant or ozone problems is that morning emissions of hydrocarbons and NO<sub>x</sub> react in the presence of sunlight over the next few hours or days to produce a peak oxidant concentration later. As these reactions occur, the air mass is normally transported by the wind. Consequently, the peak oxidant concentrations in the Bay Area tend to occur downwind of the areas where the emissions were released, settling in areas like San Jose and Livermore. Photochemical oxidants cannot, therefore, be said to be caused by a specific source, nor do peak concentrations invariably occur in the vicinity of emission sources. Thus, photochemical oxidants are an areawide pollution problem and require a regional analysis such as that done by MTC.

The data monitored at the BAAQMD station in Santa Rosa show no violations of the federal standards and only one violation of the state ozone standards in 3 years from 2003 to 2005, as shown in Table 2.4-2.

Oxides of Nitrogen (NO<sub>x</sub>): Nitrogen oxides are produced by motor vehicles (particularly heavy-duty vehicles) and high-temperature industrial operations. They have not posed a separate, serious health problem in the Bay Area in the past several years but help to create the ozone problem.

Sulfur Dioxide: SO<sub>2</sub> is produced primarily by petroleum refineries and by the combustion of sulfur-containing coal and oil in power plants. Only 20 percent is produced by burning diesel oil and other fuels in motor vehicles. Although SO<sub>2</sub> can be a serious health hazard, no excess of either state or federal standards has been recorded since 1976.

Fine Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>): Fine particulate matter (PM<sub>10</sub>, or particulate matter less than 10 microns in diameter) includes a wide range of solid or liquid particles, dust, smoke, aerosols, and metallic oxides. PM<sub>2.5</sub> refers to particulate matter that is 2.5 microns or less in diameter. When inhaled, PM<sub>10</sub> and PM<sub>2.5</sub> can penetrate the human respiratory system's natural defenses and damage the respiratory tract. There are many sources of PM<sub>10</sub> emissions, including industrial processes, grading and construction, wood burning stoves and fireplaces, and motor vehicles. Of the PM<sub>10</sub> emissions associated with motor vehicle use, some are tailpipe and tire wear emissions, but greater quantities are generated by re-suspended road dust. PM<sub>2.5</sub> results from fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. The data monitored at the BAAQMD station in Santa Rosa show no violations of the federal and state standards in the 3 years from 2003 to 2005, as shown in Table 2.4-2.

Lead: Lead is a metal that was used to increase the octane rating in auto fuel, a practice that is no longer allowed. This area is in attainment of the state ambient standards for this pollutant.

## **Receptors**

Receptor locations are chosen where the highest CO concentrations seem most likely to occur and where sensitive receptors are located. Sensitive receptors refer to residences, park, playgrounds, schools, hospitals and retirement homes, where children, the elderly, and the acutely ill are likely to reside or spend a substantial amount of time (BAAQMD, 1999). The critical receptor for analysis that is the closest to the highway traffic is 18.3 meters from the traffic. Sensitive receptors along the Project alignment include the Petaluma Valley Hospital, located at 400 North McDowell Road, and residences at various locations adjacent to the Project corridor.

## **2.4.3 Impacts**

### **Carbon Monoxide**

This air quality analysis utilizes the "Transportation Project-Level Carbon Monoxide Protocol," dated December 1997, prepared by the Institute of Transportation Studies, University of California at Davis. This protocol was approved by the MTC in Resolution No. 3075 on June 24, 1998. Use of this protocol was recommended by the Bay Area Interagency Conformity Task Force, which is the interagency consultation group established pursuant to U.S. EPA's conformity regulation and the Bay Area's conformity SIP.



Since the Bay Area was designated an attainment area for CO on June 1, 1998, the protocol indicates that an analysis by comparison is appropriate for this project. This involves a comparison of the proposed facility with existing facilities within the Air District. A list of the features to be compared is given on pages 4-6 to 4-7 of the protocol.

For mainlines, comparisons were made between the year 2010 Build conditions of Route 101 and the existing conditions on I-880 in Alameda County from Route 92 to Route 84; for intersection comparisons, the Foothill/Mission Boulevard intersection was utilized in that same area.

The Traffic Operational Analysis Report (February, 2005) for future years 2010 and 2030 indicates that traffic impacts at nearby intersections will be minimal. Most intersections will experience a less than 5 percent difference in future predicted traffic volumes between the Project's Build and No Build conditions. This difference is not significant given the accuracy of the prediction methodology.

The most critical intersections within the project area are the on- and off-ramps and East Washington Street intersection. This intersection is considerably smaller than the intersection at Foothill and Mission Boulevard, which was used as a point of comparison. The on- and off-ramps are two-lane roads, and East Washington Street is a two-lane per direction road. The Foothill and Mission intersection represents the joining of two major State Routes, plus a connector to downtown Hayward. This five-legged intersection consists of three-lane/three-lane/two-lane/three-lane approaches. Receptor distances are comparable at both intersections – 15 to 20 feet (4.5 to 6 meters). Traffic volumes, queues, delays, and background CO are greater at Mission and Foothill. The facility and a list of the features to be compared are given in Table 2.4-3.

**Table 2.4-3**

**Comparison of Mainline Conditions**

Alternative	Parameters	Route 101 (Build) <sup>a</sup>	Route I-880 (Existing)
A	Receptor Distance	18.3 (60')	7.62 m (25')
B	Roadway Geometry	4 lanes	8 lanes
C	Worst-case Meteorology	Coastal Valley	Coastal Valley
D	Peak Hourly Volumes	6,150 vph	15,000 vph
E	Hot/Cold Starts	50/10 NB 50/10 SB	50/10 NB 50/10 SB
F	Percent HDG trucks	0.9-2.9%	7.6-8.3%
G	Background CO	2.0 ppm	3.2 ppm

<sup>a</sup>The Build HOV Lane Alternative was used for the purposes of a worst-case scenario; however, air quality study results also include the Build Fixed Reversible Alternative.

Note:

vph = vehicles per hour

Source: Air Quality Impact Report, Marin-Sonoma Narrows Project on Route 101, November 2005.

The East Washington Interchange Project Build Alternative will result in a facility that will be similar and less congested than comparable facilities within the same Air District (I-880 and Foothill



and Mission). Because the comparable facilities are in an area that meets air quality standards (maintenance area), this project will also meet microscale air quality requirements and will, therefore, have no significant impact on air quality or cause exceedances of state or federal carbon monoxide standards.

### **Particulates (PM<sub>10</sub> and PM<sub>2.5</sub>)**

At this time, there is no requirement to quantify PM<sub>10</sub> or PM<sub>2.5</sub> impacts, nor are appropriate tools available for analyzing microscale impacts of PM<sub>10</sub> or PM<sub>2.5</sub>.

Although the U.S. EPA Transportation Conformity Regulations require a quantified microscale analysis for PM<sub>10</sub> emissions, no approved methodologies are available to address the microscale impacts of PM<sub>10</sub>. The regulations state that “the EPA will be releasing technical guidance on how to use existing modeling tools to perform PM<sub>10</sub> hotspot analysis. The requirements will not take effect until the Federal Register has announced availability of this guidance” (40 CFR Parts 51 and 93, Prologue Section V.K.: Federal Register, August 15, 1997). When this guidance becomes available, a quantified PM<sub>10</sub> microscale analysis may need to be performed as an addendum to the air quality study for this project.

The federal PM<sub>10</sub> standards have been met in the Bay Area Air Basin. Projects are subject to hot spot analysis for PM<sub>10</sub> if they are located in a PM<sub>10</sub> non-attainment or maintenance area (federal standards), for purposes of transportation conformity. The state PM<sub>10</sub> standard is extremely stringent, and all urbanized parts of California do not meet the standard of 50 µg/m<sup>3</sup> maximum 24-hour PM<sub>10</sub>. However, the maximum 24-hour PM<sub>10</sub> for one year, 2003, published by the Air Resources Board for the Santa Rosa PM<sub>10</sub> monitoring station (the monitoring station closest to the project site) showed no violations and is 36.3 µg/m<sup>3</sup>, below the state standard of 50 µg/m<sup>3</sup>. Moreover, the proposed Project would not result in increased traffic. Qualitatively, we expect that the proposed Project would not have adverse effects on PM<sub>10</sub> levels.

### **Mobile Source Air Toxics**

The FHWA’s MSAT guidance states that projects with a maximum annual average daily traffic (AADT) count of less than 150,000 are identified as low potential MSAT effects projects. From Caltrans’ traffic forecast and traffic operational analysis, the maximum AADT will be approximately 107,000 in the year 2030 at the East Washington Interchange. The truck percentage on the Route 101 corridor is projected to be 4.42 percent in 2030. In addition, the differences in AADT and the truck percentages with and without the proposed Project are negligible.

The amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix are the same for each alternative. Because the predicted AADT and the truck percentage in year 2030 are basically the same with and without the proposed Project, it is expected that there would be no appreciable difference in overall MSAT emissions.

## **Conformity with State Implementation Plan**

The proposed Project study area is located in a non-attainment area for O<sub>3</sub> and PM<sub>10</sub>, and includes Transportation Control Measures in the SIP. The most recent transportation plan in the project area is the Transportation 2030 Plan, adopted by MTC on February 23, 2005. The most recent TIP is the 2005 TIP. The FHWA made its conformity determination for the Transportation 2030 Plan and the 2005 TIP in August 2005. The project design scope and concept are substantially the same as the design scope and concept in the RTP and Regional TIP listings. All applicable Transportation Control Measures are included in the project. The project therefore meets the regional tests for conformity with the SIP.

### **2.4.3 Avoidance, Minimization, and/or Mitigation Measures**

None recommended.

## **2.5 Noise**

Federal regulations govern when a highway project's traffic noise increases need to be addressed, as well as when an existing high traffic noise level needs to be addressed. Caltrans complies with these federal regulations (Code of Federal Regulations Title 23, Section 772) by applying its Traffic Noise Analysis Protocol (TNAC) (August 2006). According to the policies outlined in the TNAC, project proponents must consider noise abatement measures when highway traffic noise levels are predicted to reach 66 dBA ("A-weighted decibels") or above.

In California law, CEQA provides a broad basis for analyzing and addressing the change in noise levels caused by highway projects.

### **2.5.1 Affected Environment**

In the vicinity of East Washington Avenue, there are residential and commercial land uses on both sides of US 101. In characterizing the existing noise environment, the Caltrans Office of Environmental Engineering studied existing noise levels at twelve locations throughout the project boundaries. The locations were generally chosen from the first row of homes closest to the freeway, since these "receptors" are most vulnerable to changes in the noise environment along US 101. Caltrans' noise study concluded that existing traffic noise levels were between 65 dB and 75 dB at the twelve residences.

### **2.5.2 Environmental Consequences**

The Caltrans Office of Environmental Engineering used the FHWA computer model known as TNM Version 2.5 to calculate existing and future noise levels. They concluded that, if the interchange modifications are built, the maximum increase in noise level at any location would be under one decibel. A noise increase of three decibels is considered the minimum increase that a person can perceive, so a one-decibel increase would be imperceptible to receptors.

Even though the increase in noise levels would be imperceptible, and would not result in a significant noise impact under CEQA, the Office of Environmental Engineering conducted additional studies for compliance with regulations that have jurisdiction over highway noise levels (Traffic Noise

Study Report, July 12, 2007). Caltrans complies with the pertinent federal regulation (23 CFR 772) by implementing the Traffic Noise Analysis Protocol, as described earlier. According to the noise analysis protocol, when a project is proposed where existing traffic noise levels are above 65 dB in residential areas, Caltrans needs to consider adding noise abatement features such as soundwalls. The noise study for the East Washington interchange improvements predicted that future noise levels at most residential areas within the project limits would exceed 65 dB, whether or not the project was built. Therefore, consideration of noise abatement is required under Title 23, Code of Federal Regulations, Part 772 (23 CFR 772) and under Caltrans' Traffic Noise Analysis Protocol (TNAP, 2006).

The TNAP provides examples of considerations used to determine reasonableness and feasibility. These considerations include whether the soundwalls would substantially reduce noise exposure (a reduction of at least 5 decibels), whether they are cost-effective, whether they pose visual impacts or adversely affect environmental resources, and whether they are acceptable and desirable in the local jurisdictions.

Soundwalls were initially proposed for consideration in this project. During the project development process, soundwalls were eliminated from the East Washington Interchange project because their estimated cost is an unreasonably high proportion of the total construction cost. However, the soundwalls are being considered for inclusion in the project to add lanes to U.S. 101 from Novato to Petaluma (the "Novato Narrows"). Documentation of the decision will be part of the final environmental document for that project, called the "Marin-Sonoma Narrows HOV Widening Project."

### **2.5.3 Avoidance, Minimization, and/or Mitigation**

None proposed.

### **2.5.4 Construction Noise**

#### **Affected Environment**

Existing peak hour noise levels ranging from 59 to 75 dBA Leq(h) have been measured and estimated at various locations within the Project limits along Route 101. At present time, some residences are receiving noise levels over the federal/state NAC of 67 dBA Leq(h). Sensitive receptors along the Project alignment include the Petaluma Valley Hospital, located at 400 North McDowell Road, and residences at various locations adjacent to the Project corridor.

#### **Environmental Consequences**

Noise levels along the Project alignment would increase in the short term from construction related noise. Construction noise at the proposed Project site would be intermittent and its intensity would vary. Noise levels typically associated with the types of equipment that would be utilized during Project construction are listed in Table 2-6.

During the construction period, some of the sensitive receptors that are close to the highway may be exposed to high noise levels. Effective noise control during the construction of a Project means

Table 2-6 Construction Operation Noise Levels									
No. of	Equipment Type	Maximum Equipment Noise Level at 15 m (dBA)	Hourly Equivalent Noise Levels at 15 m (dBA) <sup>a</sup>	Hourly Equivalent Noise Levels at 30 m (dBA) <sup>a</sup>	Equipment Type		Maximum Equipment Noise Level at 15 m (dBA)	Hourly Equivalent Noise Levels at 15 m (dBA) <sup>a</sup>	Hourly
					No. of Items				
Clear and Grub					Earthwork				
1	Excavator	83	80	74	1	Excavator	83	80	74
1	Backhoe	75	72	66	1	Backhoe	75	72	66
4	Heavy Duty Dump Trucks	77	74	68	1	Front Loader	74	71	65
		Overall L <sub>eq</sub> (h)	84	78	1	Dozer	85	82	76
					1	Trencher	80	77	71
Bridge Demolition					4	Heavy Duty Dump Trucks	77	74	68
1	Backhoe	75	72	66			Overall L <sub>eq</sub> (h)	87	81
1	Excavator	83	80	74					
4	Heavy Duty Dump Trucks	82	79	73	Structures				
		Overall L <sub>eq</sub> (h)	87	81	1	Excavator	83	80	74

[illegible]

3	Ready Mix Trucks	81	78	72	
1	Asphalt Paver	79	76	70	
1	Asphalt Roller	78	75	69	
1	Sweeper	79	76	70	
4	Medium Duty Dump Trucks	77	74	68	
2	Flatbed Truck	75	72	66	
		Overall L <sub>eq</sub> (h)	88	82	
<sup>a</sup> Predicted noise levels are from the center of the construction activity. Source: Parsons, 2005 Notes: Calculated construction noise levels assume that all equipment operates for 6 hours out of an 8-hour day. Calculations also assume that all equipment is operated at full load 70 percent of the time.					

minimizing noise disturbances to the surrounding communities. Combinations of impact minimization techniques, as outlines below, would be implemented during Project construction to minimize any noise-related impacts to residences and businesses located within or adjacent to the Project area.

### **Avoidance, Minimization, and/or Mitigation**

Construction would occur in compliance with the provisions set forth in Section 7-1.01I of Sound Control Requirements, included in the latest Caltrans Standard Specifications. These Standard Specifications are meant to minimize the impact from short duration construction noise, and include the following requirements:

- Each internal combustion engine, used for any purpose on the job or related to the job shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall operate without a muffler.
- Ensure that all equipment items have the manufacturer's recommended noise abatement measures, such as mufflers, engine enclosures, and engine vibration isolators, intact and operational. All construction equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers and shrouding, etc.) (Caltrans, 1999).

In addition to the aforementioned Standard Specifications, construction noise impacts can be minimized by implementing some or all of the following administrative measures:

- Avoid construction activities during the nighttime and on weekends.
- Keep noisy equipment and haul roads away from sensitive receptors.
- Keep the community informed of upcoming, especially noisy construction activities and establish a field office to handle noise complaints.

## **2.6 Biology, Including Wetlands**

The analysis provided below is based on a Natural Environment Study (NES) completed for the proposed Project in March 2007

### **2.6.1 Affected Environment**

The terrain within the Project area is mainly flat, with low rolling hills in the surrounding area. Oaks (*Quercus* sp.) are scattered throughout the surrounding area. Eucalyptus (*Eucalyptus* sp.) and coastal redwoods (*Sequoia sempervirens*) comprise the majority of trees within the Project area. The redwoods within the Project limits are in very poor health because this species thrives in cooler, moist coastal climates, rather than the hot, dry climate in Petaluma. In addition, the pollutants from traffic along Route 101 add to their unhealthy condition.

Washington Creek is the only waterway within Project limits. This creek carries water and large quantities of sediment from Sonoma Mountain to the Petaluma River and is somewhat degraded within the Project area. Vegetation surrounding Washington Creek in the vicinity of the Route 101



Washington Creek Bridge consists mainly of willow (*Salix* sp.), cottonwood (*Populus fremontii*), and ornamental shrubs on the northeast side of Route 101 where the new free-span on-ramp will be constructed.

## 2.6.2 Environmental Consequences

### Tree Removal

Under the worst-case scenario (build alternative), the Project would entail the removing of approximately 780 trees. The majority of these trees are coastal redwoods that are in poor health (per Caltrans conversation with Bill Cox, CDFG Fisheries Biologist and Sonoma County contact). Because of their poor health and proximity to the roadway, the redwoods to be removed do not provide optimum nesting habitat. However, nesting bird surveys will be conducted within 2 weeks prior to project construction to ensure that no birds or their nests will be impacted by construction activities. The healthiest redwoods are at the northern end of the project limits and the project Design team will take every precaution to avoid these trees.

Table 2-7 shows a worst-case scenario of trees that would be removed during the East Washington Interchange Project.

<b>Table 2-7</b> <b>East Washington Interchange Project Tree Removal Counts</b> <b>Worst-Case Scenario (NE and SW Quadrants)</b>		
Species	Total	Questionable
<b>Northeast Quadrant</b>		
Coast live oak	6	3
Locust	1	1
Poplar	73	15
Red willow	13	7
Coast redwood	181	2
Subtotal	274	28
<b>Southwest Quadrant</b>		
Pine	32	32
Coast redwood	411	3
Subtotal	443	35
<b>Total</b>	<b>717</b>	<b>63</b>
<b>Grand Total Including. Questionable Column</b>	<b>780</b>	
*Questionable trees are ones located within or near on/off-ramps that may be left in place per Landscape Design if possible.		

No sensitive species were observed within the Project limits during surveys, and no impacts to sensitive species are anticipated as a result of this Project.

## Wetland Impacts

No planned Project-related work will occur in Washington Creek. A roadside ditch built in uplands at both ends comprising of approximately 80.67 cubic yards (yd<sup>3</sup> or 0.05 acre) is within the project boundaries and will be temporarily impacted by construction activities. Figure 2.6 shows the roadside ditch between Washington and Lynch Creeks. This area is only inundated with water after rain events, and the water is carried to both Washington and Lynch Creeks. A new ditch would be constructed immediately east of the existing location and would maintain the same characteristics of the original northern half of the ditch. Water would be piped to Washington Creek in the southern half of the ditch. Both methods would maintain current flow characteristics. If it is determined by the U.S. Army Corps of Engineers that the ditch may be delineated wetlands of Waters of the U.S., we will apply for required permits and make sure we comply with the no net loss policy.



**Figure 2.6 – Wetland/Waters of the U.S. ditch between Washington Creek and Lynch Creek**

*Note that photo was taken during a rain event (November 2006).*

### 2.6.3 Avoidance, Minimization, and/or Mitigation

Impacts associated with the proposed tree removal will be minimized by scheduling tree removal activities outside of nesting season. Additionally, a Caltrans biologist will conduct a survey for nesting birds within 2 weeks prior to the beginning of construction, including the removal of any vegetation. If any nests are observed, all work in the area will cease and CDFG will be contacted.

Although the proposed tree removal would not result in a loss of habitat, it may result in aesthetic impacts; these potential impacts and associated impact minimization measures are discussed in Section 2.3 of this document.

**Impact Minimization Measure 2.6-1:** Caltrans will replant as many trees and other vegetation as possible within project limits to compensate for tree removal, and plans to plant riparian trees in an area owned by the Sonoma County Water Agency. This area, along the Washington Creek channel, is approximately 1.61 kilometers (1 mile) upstream of the construction project. Sonoma County Water Agency plans to maintain the trees for a period of three years. Caltrans plans to monitor the trees for a period of five years. In addition, any vegetation in the area of the new northbound onramp that can be trimmed rather than removed will be trimmed to International Society of Arboriculture (ISA) standards.

**Impact Minimization Measure 2.6-2:** Caltrans BMPs will be utilized to avoid silt and debris loading in Washington Creek below the construction activities. Methods used will include designating an ESA from top of bank to top of bank along Washington Creek within the Project area. ESA fencing will be placed 1 m (3 ft) around 3 outfall locations. All work around outfall locations will be conducted with hand tools to reduce impacts to the creek and bank. No work will be conducted inside the ESA. Also, a temporary straw bale barrier will be used at the base of the ESA fence to keep silt and debris from leaving the construction area. All generated debris, fill, and excess material will be removed from the site and disposed of in an approved location outside of USACE and CDFG jurisdiction.

The following measures need to be incorporated into Project BMPs:

- Any in-channel work will be conducted between June 15 and October 15 to prevent sedimentation of the stream.
- Removal and disturbance of riparian vegetation will be minimized and avoided to the fullest extent possible.
- An SWPPP will be incorporated and implemented by the contractor to prevent sedimentation of the stream channel and protect water quality.

**Impact Minimization Measure 2.6-3:** All trees within the Project area will be trimmed to ISA standards to ensure proper growth and vigor upon Project completion.

**Impact Minimization Measure 2.6-4:** The existing roadside ditch (wetlands area) will be relocated and constructed in the same manner immediately east of the current location.

As proposed, the Project's impacts to biological resources would be less than significant.

## **2.7 Cultural Resources**

### **2.7.1 Regulatory Setting**

#### **Identification of Historic Properties**

Under Section 106 of the National Historic Preservation Act of 1966, federal agencies are required to take into account the effects of their undertakings on historic properties. Historic properties are those that are included in the National Register of Historic Places (NRHP) or that meet the evaluation criteria for the National Register. The National Register is the official inventory of the nation's

historic places that are worthy of preservation. The evaluation criteria include an association with events that have made a significant contribution to the broad patterns of our history (Criterion A); an association with the lives of persons significant in our past (Criterion B); that embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values (Criterion C); that have yielded, or may be likely to yield, information important in prehistory or history (Criterion D). If the project may result in effects to historic properties, the agency must determine the scope of appropriate identification efforts and then proceed to identify historic properties in the area of potential effects, or APE.

After completing identification efforts, the agency, in consultation with the SHPO or THPO assesses the effects of the project on the identified historic properties based on the adverse effect criteria found in the Advisory Council on Historic Preservation's regulations found at 36 CFR 800. If there is agreement among the agencies consulted that there will be no adverse effect, the lead agency proceeds with the undertaking and any agreed-upon conditions. If they agree that there will be an adverse effect, the agency begins consultation to seek ways to avoid, minimize or mitigate the adverse effects. Properties found eligible under Section 106 are consequently considered historical resources under CEQA.

## **Methodology**

In accordance with CEQA and with the January 1, 2004 *Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation*, Caltrans prepared a Historic Property Survey Report (HPSR) for the East Washington Street Interchange Project and initiated consultation with the SHPO in May 2005. The HPSR was intended to fulfill three of Caltrans' responsibilities under Section 106 of the National Historic Preservation Act: determination of the APE; identify potential historic properties located within the Project's APE; and evaluate potential historic properties for eligibility to the NRHP. Included as attachments to the HPSR are the Archaeological Survey Report and the Historical Resources Evaluation Report, which identify both historical properties and archaeological resources present within the Project vicinity.

Previously recorded archaeological sites within and adjacent to the APE were identified through a record search and literature review conducted at the Northwest Information Center of the California Historical Resources Information System for the Marin-Sonoma Narrows Project, which included the study area for this Project. Also consulted were the Sonoma County Assessor's Records, including parcel maps and property records, the California State Library, and the Caltrans Cultural Resources Library. In addition, reports on file with Caltrans District 4 in Oakland were reviewed for information related to the Project area.

## **2.7.2 Affected Environment**

### **Architectural Resources**

Consultation and identification efforts, including checks of Historic landmarks lists and California Points of Historic Interest and background research conducted at the California State Library and the Caltrans Cultural Resources Library, resulted in the identification of three resources within the APE

that required formal evaluation for NRHP eligibility. The resources evaluated included the following three housing tracts, originally constructed in the early to mid-1950s:

- 1) Montclair Manor Subdivision
- 2) McDowell Village Subdivision
- 3) Novak Subdivision #2

Caltrans' evaluation found that none of the three properties were eligible for the NRHP, as none of the homes nor the subdivision designs possessed architectural or historic significance or were associated with significant persons or events. On June 17, 2005, Caltrans received concurrence from SHPO with their finding of ineligibility. Therefore, it has been determined that no buildings or structures in the APE which meet the criteria for listing on the NRHP, or that are considered historical resources for the purposes of CEQA compliance.

### **Archaeological Resources**

The APE for the Project was surveyed previously for archaeological resources as part of the archaeological study conducted for the Marin Sonoma Narrows Project during the period from 2001 to 2003. During the archaeological survey, a crew of five walked the entire study area spaced at 30-m intervals. In areas where visibility was reduced by vegetation or disturbance, crew members periodically scraped the ground surface. No archaeological resources were identified within or immediately adjacent to the study area; nor were any known archaeological resources found to be located within the APE as a result of the record search and literature review.

## **2.7.3 Environmental Consequences**

### **Architectural Resources**

The HPSR conducted for this Project found that no properties eligible for NRHP listing are present within the Project's APE. Any properties located within the Project vicinity, but outside of the APE that are eligible for inclusion within the NRHP would not be affected by the proposed Project. Therefore, no adverse affects to historic properties per Section 106 criteria, or significant impacts for the purposes of CEQA, would occur as a result of the proposed Project.

### **Archaeological Resources**

Based on information collected during field surveys and documentary research, it is not anticipated that construction activities would encounter or disturb buried archaeological resources. Implementing Caltrans standard protocol for minimizing impacts to cultural resources, would reduce any potential impacts to buried, previously undocumented archaeological deposits to a less than significant level.

## **2.7.4 Avoidance, Minimization and/or Mitigation**

Because no historic or prehistoric resources were identified within the Project area, no adverse effects to cultural resources are anticipated as a result of Project implementation. If cultural materials are



discovered during construction, Caltrans standard protocol will be followed: all work in the vicinity will cease until a qualified archaeologist can evaluate the nature and significance of the find.

Implementation of this protocol would minimize any potential impacts to cultural resources such that no significant impacts would occur.

## 2.8 Geology

### 2.8.1 Affected Environment

The Project site is located in the San Francisco Bay Area, within the California Coast Range geomorphic province. This province comprises a series of long, northwest trending mountain ranges separated by parallel river valleys, including the Petaluma Valley, where the Project is located. The alluvium of the Petaluma Valley is interbedded with marine sediments, which overlie the Glen Ellen formation. The Glen Ellen formation consists of lenticular tongues and beds of poorly sorted gravel, sand, silt, and clay.

The entire Project area is covered by Holocene alluvial sediments, deposited by streams emanating from the mountains as debris flows, hyperconcentrated mudflows, or braided stream flows. Sediments include sand, gravel, silt, and clay that are moderately to poorly sorted, and moderately to poorly bedded. This unit includes active stream channels that are too narrow (U.S. Geological Survey Open File Report 98-460). Logs of test borings show that the top layer consists of soft silty clay interbedded with loose to medium dense sand/silty and underlain by relatively firm to stiff clay (Caltrans, 2006, Geotechnical Design Report, Washington Creek on-Ramp). The Project area is located within the Petaluma Valley Groundwater Basin, wherein groundwater depth ranges from groundwater elevation 16.7 feet to 23.6 feet.

The San Francisco Bay Area is a well-known region of continuing seismic activity. The Rodger Creek Fault is considered an active fault and is located within 3.7 miles (6 kilometers) to the east of the Project. The other active faults in the area include the West Napa Fault and Hayward Fault, located approximately 16.5 and 18.9 miles (26.7 and 30.4 kilometers, respectively) to the south and southeast of the site, respectively. All of these faults are within the San Andreas Fault system and have produced major earthquakes in historical time. Table 2-8 lists the distances from the project to nearby active faults, estimated maximum credible events, and the maximum credible rock acceleration anticipated at the Project location.

**Table 2-8 Fault Systems and Activity Levels**

Fault	Distance from Project (km)	Maximum Credible Earthquake <sup>a</sup>	Peak Acceleration (g) <sup>b</sup>
Rodger Creek	6.0	7.0	0.46
San Andreas	25.9	8.0	0.36
West Napa	26.7	6.5	0.14



Hayward	30.4	7.5	0.22
<sup>a</sup> Magnitude in Moment Magnitude ( $M_w$ ), Scale to the nearest quarter unit.			
<sup>b</sup> The unit "g" is a measure of ground motion acceleration in relation to the acceleration rate of gravity.			

Although strong ground shaking is expected at the Project site during moderate to severe earthquakes in the San Francisco Bay Area, the Project area is not crossed by any active fault. As a result, there is low potential for ground rupture on the Project site.

Some loose to medium-dense silty sand/sand layers are susceptible to liquefaction during a major seismic event. Based on the liquefaction analyses, some sand layers encountered, in the range of 10 to 20 feet deep, are theoretically liquefiable. The probability of liquefaction occurring in the northern portion of the project site is relatively low (City of Petaluma, 2005, East Washington Place Environmental Impact Report).

The project site is relatively flat and is not located adjacent to any hillsides. Thus the landslide risk is low.

Moderately to highly expansive soils were found to be blanketing much of the site. The soils are non-corrosive (Materials File, 2006).

Most soils covering the project area are classified as very slightly erodible or not erodible according to the Natural Resource Conservation Service (formerly Soil Conservation Service).

### **2.8.2 Environmental Consequences**

The proposed Project includes the following elements that could result in impacts to geological resources: roadway embankment, ground improvement, bridge improvement, retaining walls, and minor structures such as roadway signs.

Widening Route 101 in both northbound and southbound directions would require fill up to 3.0 meters high. It is proposed that a portion of these fills be retained by retaining walls on pile foundation, located near ROW. The geotechnical design recommendations prepared for this Project indicate that these soils will settle more than 200 mm in some locations. Because the settlement will occur immediately behind the retaining wall footing, it will adversely affect the roadway grade and drainage. The geotechnical analysis also indicates specific locations along the proposed roadway widening at which excessive settlement is likely to occur. Lightweight fill will be utilized in these areas in lieu of regular fill to reduce anticipated settlement to an acceptable level. With the use of lightweight fill in targeted areas, along with implementation of measures outlined below, impacts associated with fill settlement would be less than significant.

Shallow groundwater, especially in the southern portion of the site, could affect grading and underground construction activities because shallow groundwater may result in potentially wet and unstable subgrade soils, difficulty achieving compaction, and difficult underground utility installation.

### **2.8.3 Avoidance, Minimization, and /or Mitigation Measures**

All Project-related construction will occur in accordance with the California Building Code, which requires that structures should be built to withstand a 7.0 magnitude earthquake. Further, Project design and construction will comply with measures set forth by the California Division of Mines and Geology Guidelines for Evaluating and Mitigating Seismic Hazards.

## **2.9 Hydrology and Water Quality**

A Water Quality Study Report was prepared May 5, 2007. A Storm Water Data Report was also prepared in February, 2007.

### **2.9.1 Environmental Consequences**

#### **Washington Creek**

No impacts have been identified associated with the proposed bridge along the northbound diagonal on-ramp over Washington Creek. The only offsite drainage affecting the site is from the limited watersheds in portions of the properties immediately adjacent to ROW. Runoff from these limited watersheds would be captured by proposed onsite facilities, including a new storm drain pipe system in the northeast quadrant.

#### **Proposed Drainage Improvements**

A new 450-mm drainage system would be constructed to accommodate the runoff from the new northbound Route 101 on-ramp. This system would tie into a new 600-mm outfall to Washington Creek, situated south of the mainline and immediately north of the proposed bridge that would span the creek. The runoff from the strip mall adjacent to the new on-ramp would be collected in a 450-mm drainage system located along the ROW line and would connect to the 600-mm outfall at Washington Creek. The 600-mm outfall replaces the outfall of the existing roadside ditch to Washington Creek currently occupying this location. Drainage north of the new on-ramp would continue to utilize a portion of the existing ditch that drains into Lynch Creek.

The Project would place a biofiltration strip along southbound Route 101 between the ROW and the edge of shoulder from just north of Caulfield Lane to the entrance of the southbound on-ramp from East Washington Street. The biofiltration strip would have the capacity to treat runoff from approximately 5.68 acres (2.3 hectares) of impervious area. The added impervious area for the Project is 3.28 acres (1.33 hectares), and the reworked area is 2.2 acres (0.89 hectare).

The treated runoff would flow along a drainage ditch to the south along the ROW. The ditch would be lined from approximately 100 feet north of Caulfield Lane to just south of the pedestrian overcrossing. From just south of the pedestrian overcrossing to the entrance of the southbound on-ramp from East Washington Street, the ditch would be unlined.

A roadside ditch is being impacted due to highway widening and a new northbound on-ramp in the northeast quadrant, which drains to Lynch Creek. The southern half is federal jurisdictional waters that flow to Washington Creek. The man-made ditch, built in upland conditions, is ephemeral and

functions as a conveyance for roadside runoff. Part of this ditch may have some features typical of wetlands.

## **2.9.2 Avoidance, Minimization, and/or Mitigation Measures**

### **Hydrology**

Drainage design for this project includes locating pavement and field inlets, grading off-pavement areas, sizing culverts and drainage facilities to handle onsite and offsite flows, and modifying or relocating existing facilities that were designed and constructed as part of past highway construction projects. Offsite drainage to onsite facilities has been considered in the design of the onsite facilities. No significant changes to the hydrology and hydraulics of the receiving waters (unnamed drainage ditch, Washington Creek, Lynch Creek) are expected.

The project will relocate the wetland portion (0.05 acres) of the ditch in kind to the east and transmit the waters of the U.S. half (0.05 acres) in a manner as to not impede flow rates. The San Francisco Bay Regional Water Quality Control Board considers these impacts as permanent and may require the Department to replace or compensate for the area's wetland values. The Department might replace the wetland values by purchasing credits at a nearby mitigation bank. One possible bank is the Hazel Mitigation Bank in the City of Santa Rosa Plain area. The current estimate is \$425,000/acre.

### **Water Quality**

According to Caltrans National Pollutant Discharge Elimination System (NPDES) permit and Construction General Permit, a variety of BMPs would be incorporated into the project design and construction contract to reduce the discharge of pollutants during construction and over the life of the project to the maximum extent practicable. These BMPs fall into three categories: construction site BMPs that are temporary in nature, pollution prevention BMPs that would be incorporated into the project design, and permanent BMPs to treat long-term runoff and stormwater. A general description of these measures follows.

#### **Construction Site BMPs**

Construction site BMPs are implemented during construction activities to reduce pollutants in stormwater discharges throughout construction. For instance, areas requiring grading of existing slopes and tree removal where soil disturbance is greater than 1 acre (0.4 hectare), an SWPPP would be developed prior to construction. The deployment of various erosion and water pollution control measures would be implemented, such as temporary silt fencing, contained concrete, washout areas, stockpile cover, stabilized construction entrance/exit, and temporary soil stabilizers, to prevent and minimize soil erosion and sediment discharges during construction.

#### **Permanent Pollution Prevention BMPs**

Pollution prevention BMPs are permanent measures that would be incorporated into project design to improve stormwater quality by reducing erosion, stabilizing disturbed soil areas, and maximizing vegetated surfaces. Erosion control measures would be provided on all disturbed areas to the extent feasible. These measures can utilize a combination of source and sediment control measures to

prevent and minimize erosion from areas of ground disturbance. Source controls can utilize erosion control netting in combination with hydroseeding. The biodegradable netting is effective in providing good initial mechanical protection while seed applied during the hydroseeding operation germinates and establishes itself. Other forms of source control, such as tacked straw, may also be used where applicable. Sediment controls, such as biodegradable fiber rolls, can be used to retain sediments and to help control runoff from disturbed slope areas.

Outlet protection and velocity dissipation devices placed at the downstream end of the culverts and channels are also pollution prevention BMPs that reduce runoff velocity and control erosion and scour. The need for these devices for this Project will also be further investigated during the design phase.

### **Permanent Treatment BMPs**

Treatment BMPs are permanent devices and facilities constructed to treat stormwater runoff. Permanent treatment BMPs considered for this project include biofiltration strips.

Because this Project is within a dense urban area (City of Petaluma) and will entail soil disturbance, permanent treatment BMPs, such as those previously mentioned, have been considered for the Project.





## **CHAPTER 3 Cumulative Impacts**

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### **3.1 Regulatory Setting**

CEQA defines cumulative impacts as “two or more individual effects which, when considered together are considerable,” and suggests that cumulative impacts can result from individually minor but collectively significant projects being implemented over a period of time (State CEQA Guidelines, Section 15355). The State CEQA Guidelines suggest two possible methods for assessing potential cumulative effects: the list-based approach and the projections-based approach (CEQA Guidelines, Section 15130). The list-based approach, which considers a list of past, present, and reasonably foreseeable future projects producing related or cumulative impacts, is the approach that was utilized herein.

For the purposes of this analysis, cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this Project. Table 3-1 summarizes the past, present and reasonably foreseeable Projects in the study area that were considered as part of this cumulative analysis.

The following analysis pertains to resource areas for which Project-related impacts would be either less than significant or less than significant with the implementation of mitigation measures. Aesthetics is the only resource area analyzed in this document for which impacts and mitigation measures have been identified; therefore, this is the only area for which a detailed, list-based approach to assessing cumulative impacts has been utilized. The potential for cumulative impacts in the other resource areas analyzed in this document is addressed below; but, as no impacts and mitigation measures have been identified in these areas, a detailed comparison of this project to the projects listed in Table 3-1 has not been done.

### **3.2 Traffic**

The proposed Project would include construction of a new diagonal on-ramp and a new bridge over Washington Creek, which would allow for the widening of the on-ramps at East Washington Street and would increase traffic capacity. Additionally, the existing northbound on/off-ramps traffic signal at East Washington Street would be upgraded and lanes restriped to improve the traffic flow in the vicinity of East Washington Street and the on/off-ramps. As described in Section 2.2, the proposed Washington Street interchange improvements are expected to have a beneficial impact on traffic in the vicinity of the Project. Because no significant adverse impacts are expected to occur with Project implementation, the Project’s contribution to cumulative traffic impacts would be less than significant.

### **3.3 Aesthetics**

The primary effect that this Project and related Route 101 projects would have on aesthetics along the highway corridor would be the removal of trees along the highway. The present Project would result in the removal of approximately 780 trees, including approximately 592 mature redwood trees. The trees to be removed are outside of their biological range, do not provide optimum habitat, and do not support redwood populations; however, they are considered

Table 3-1 Past, Present, and Foreseeable Future Projects in the Study Area					
Key	Project and Location	Project Type	Document Type	Project Status	Shared Resource Impact Areas
<b>County of Sonoma</b>					
1	Dutra Asphalt & Recycling Facility 3355 Petaluma Blvd. S.	Industrial	IS	Unknown	<ul style="list-style-type: none"> <li>Wetlands</li> <li>Aesthetics</li> <li>Water Quality</li> </ul>
2	Haynie Fueling and Rhinehart Truck Stop 2645 & 2525 Petaluma Blvd. South	Commercial	MND	Unknown	<ul style="list-style-type: none"> <li>Aesthetics</li> </ul>
3	Shamrock 210 & 222 Landing Way	Industrial	MND		<ul style="list-style-type: none"> <li>Wetlands</li> </ul>
<b>City of Petaluma</b>					
4	Intersection widening and signalization project Adobe Rd/Corona Rd IS	Traffic Improvement	MND		<ul style="list-style-type: none"> <li>Wetlands</li> <li>Aesthetics</li> </ul>
5	Boulevard Apartments 945 Petaluma Boulevard North	Residential	MND	Completed Construction	<ul style="list-style-type: none"> <li>Water Quality</li> </ul>
6	Deer Creek Plaza NW side of N. McDowell/Rainier Avenue Intersection	Commercial	IS		<ul style="list-style-type: none"> <li>Wetlands</li> <li>Water Quality</li> </ul>
7	Lafferty Ranch Park 3.5 miles from Petaluma	Recreation	EIR		<ul style="list-style-type: none"> <li>Wetlands</li> <li>Water Quality</li> <li></li> </ul>
8	Lomas Petaluma Subdivision Quarry Reclamation 1500 Petaluma Boulevard S.	Residential	MND		<ul style="list-style-type: none"> <li>Wetlands</li> <li>Water Quality</li> <li></li> </ul>
9	Magnolia Place Magnolia Avenue, near Cemetery	Residential	MND	Completed Construction	<ul style="list-style-type: none"> <li>Wetlands</li> <li>Water Quality</li> </ul>
10	Marina Office Building 785 Baywood Drive	Office	MND	Approved	<ul style="list-style-type: none"> <li>Wetlands</li> <li>Water Quality</li> </ul>
11	McDowell/East Washington	Traffic Improvement	MND		<ul style="list-style-type: none"> <li>Wetlands</li> </ul>

Table 3-1 Past, Present, and Foreseeable Future Projects in the Study Area					
Key	Project and Location	Project Type	Document Type	Project Status	Shared Resource Impact Areas
12	Petaluma Theater District First and Second Streets at C and D Streets	Residential & Commercial	MND	Under Construction	<ul style="list-style-type: none"> <li>•</li> </ul>
13	Recycled Water Pipeline Phase I Brown's Lane/Ely Road/Casa Grande Road	Utility	MND		<ul style="list-style-type: none"> <li>• Wetlands</li> <li>• Water Quality</li> </ul>
14	Redwood Technology Center		EIR		<ul style="list-style-type: none"> <li>• Wetlands</li> <li>• Water Quality</li> </ul>
15	Sola Business Park Cader Lane (between Lakeville Hwy and South McDowell)	Office	MND		<ul style="list-style-type: none"> <li>• Water Quality</li> </ul>
16	Technology Lane Commercial Center Technology Lane	Office	MND	Under Construction	<ul style="list-style-type: none"> <li>• Wetlands</li> <li>• Water Quality</li> </ul>
17	Sweed School 331 Keller Street				<ul style="list-style-type: none"> <li>• Water Quality</li> </ul>
18	Park Square Lakeville Highway and Casa Grande Road	Residential & Commercial	UNK	Under Construction	<ul style="list-style-type: none"> <li>• Water Quality</li> </ul>
19	Marin Sonoma Narrows 101 Widening	Transportation	EIR/EIS	Final environmental document being prepared	<ul style="list-style-type: none"> <li>• Wetlands</li> <li>• Water Quality</li> <li>• Aesthetics</li> <li>•</li> </ul>
20	Old Redwood to Rohnert Park Expressway HOV Project	Transportation	EIR/EA	Final environmental document being prepared	<ul style="list-style-type: none"> <li>• Water Quality</li> <li>• Aesthetics</li> </ul>
21	Rohnert Park to Wilfred Avenue HOV	Transportation	MND/EA		<ul style="list-style-type: none"> <li>• Wetlands</li> <li>• Water Quality</li> <li>• Aesthetics</li> </ul>

Table 3-1 Past, Present, and Foreseeable Future Projects in the Study Area					
Key	Project and Location	Project Type	Document Type	Project Status	Shared Resource Impact Areas
22	Highway 12 to Steele Lane HOV	Transportation	EIR/EA		<ul style="list-style-type: none"> <li>• Wetlands</li> <li>• Water Quality</li> <li>• Aesthetics</li> </ul>
23	Steele Lane to Windsor River Road HOV	Transportation	EIR/EA		<ul style="list-style-type: none"> <li>• Wetlands</li> <li>• Water Quality</li> <li>• Aesthetics</li> </ul>
Notes: MND = Mitigated Negative Declaration EIR = Environmental Impact Report EA = Environmental Assessment					

aesthetic resources. In particular, the redwood trees to be removed as part of the proposed Project were planted in clusters along Route 101 to establish its character as the “Redwood Highway.” Some replanting of trees would occur under the proposed Project, although the trees to be planted would be limited to specific areas within the Project footprint.

Multiple, related projects would result in impacts to redwood trees along the Route 101 corridor in the Project vicinity. The Marin-Sonoma Narrows Project would remove between 2,100 and 2,500 trees, including many mature redwoods. The Route 101-Route 12 to Steele Lane project would remove about 100 redwood trees; this Project would maximize replanting of redwood trees along Route 101 where possible without impairing sight distances or encroaching into clear recovery areas. The Route 101-Wilfred Avenue to Route 12 project removed about 200 redwood trees and will replace them along certain points of the straightaway segments of the project, at interchanges in the project area, and along straightaway segments of Route 101 south of the project boundaries. The Route 101-Steele Lane to Windsor Road project would remove about 390 redwood trees, which represents approximately 8 percent of the total within its project boundaries. The Canon Manor West Subdivision, located east and adjacent to the City of Rohnert Park in Sonoma County, would remove up to 15 redwood trees from the project area; this project would replace the removed redwood trees in approximately the same location. The Route 101-Rohnert Park Expressway would remove a maximum of 1,060 mature redwood trees.

Because the proposed Project, along with other, similar projects in the vicinity, would result in the removal of a substantial number of redwood trees along the Route 101 corridor, the visual character of the highway would change. The loss of vegetation associated with the Project and with other projects in the vicinity would adversely affect the landscape character of the highway, including the aesthetics of the driving experience and the views from residences adjacent to the highway corridor. However, as discussed in Section 2.3, the trees to be removed as a result of this Project are in poor health, and as a result, their visual quality is relatively poor. Further, the Project would incorporate replacement planting including trees and other tall vegetation.

Additionally, other past or reasonably foreseeable Projects along Route 101 also would include replacement planting, which would reduce the severity of visual impacts along the highway corridor. The Marin Sonoma Narrows project, in particular, would replace the aesthetic value of trees through replacement plantings throughout its project limits, which include the entire area of the East Washington Street Interchange project.

Although the accumulated tree removal due to projects along the Route 101 corridor would result in adverse visual impacts within the Project and vicinity, the Project’s would not contribute to a cumulatively-significant visual impact.

### **3.4 Air Quality**

As described in Section 2.4 above, the Project would not result in any significant air quality impacts. The Project would meet microscale air quality requirements would, therefore, have no significant impact on air quality or cause exceedances of state or federal carbon monoxide standards. Further, because the Project would not result in increased traffic, it is not expected



to have adverse effects on PM<sub>10</sub> levels or on Mobile Source Air Toxics. For these reasons, the Project would not result in a cumulatively considerable air quality impact.

### **3.5 Noise**

The operational noise increase that would occur with Project implementation would be imperceptible to the human ear. Therefore, the Project would not make a significant long term contribution to cumulative noise levels in the Project area. Further, as proposed in Section 2.5, numerous sound control measures would be implemented during Project construction to reduce construction-related noise impacts. Insofar as temporary project related noise impacts would be minimized and the Project would not generate a long-term increase in Project-area noise levels associated with increases in traffic, the Project's contribution to cumulative noise impacts would be less than significant.

### **3.6 Biology**

Impacts associated with the proposed tree removal will be minimized by scheduling tree removal activities outside of nesting season. Additionally, a Caltrans biologist will conduct a survey for nesting birds within 2 weeks prior to the beginning of construction, including the removal of any vegetation. If any nests are observed, all work in the area will cease, and CDFG will be contacted.

With implementation of impact minimization measures proposed in section 2.6, Project-related impacts to biological resources would be less than significant. Although other planned and ongoing projects within the Project area may result in significant impacts to wildlife or habitat, the proposed Project would result in a less than significant impact to biological resources and, therefore, its contribution to cumulative biological resource impacts would be less than significant.

### **3.7 Cultural Resources**

Based on information collected during field surveys and documentary research, it is not anticipated that construction activities would encounter or disturb buried archaeological resources. Further, under the authority of FHWA, Caltrans determined that no historic properties would be affected by the Project. Implementation of Mitigation Measure 2.7-1 would reduce any potential impacts to buried, previously undocumented archaeological deposits to a less than significant level. Therefore, the Project's contribution to cumulative impacts to cultural resources in the Project vicinity would be less than significant.

### **3.8 Geology**

The proposed Project would not result in cumulatively considerable geology impacts. Implementation of Project-specific measures outlined in Section 2.8 of this document would ensure that Project related geology impacts would be less than significant. Further, all design and construction related to this Project and to other projects in the vicinity will occur in accordance with the California Building Code, which requires that structures should be built to withstand a

7.0 magnitude earthquake, and with measures set forth by the California Division of Mines and Geology Guidelines for Evaluating and Mitigating Seismic Hazards.\_

### **3.9 Hydrology and Water Quality**

The Project would result in an increase in wastewater discharge associated with an increase in impervious surfaces. According to the Caltrans NPDES permit and Construction General Permit, a variety of BMPs would be incorporated into the Project design and construction contract to reduce the discharge of pollutants during construction and over the life of the project to the maximum extent practicable. These BMPs fall into three categories: construction site BMPs that are temporary in nature, pollution prevention BMPs that would be incorporated into the project design, and permanent BMPs to treat long-term runoff and stormwater. Implementation of these measures, as described in Section 2.9 of this document, would minimize the Project-related impacts associated with wastewater discharge. Similar measures would be required with implementation of other projects in the area. Conformity by all projects with standard Caltrans BMPs, along with those measures required by the Regional Water Quality Control Board, this Project, in combination with other projects in the area, would result in a less than significant cumulative impact to hydrology and water quality.



## **CHAPTER 4** Comments and Coordination

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### **Opportunities for Public Comment**

On November 14, 2007, Caltrans released the Initial Study with Proposed Mitigated Negative Declaration for the U.S. Route 101 East Washington Street Interchange Project. A public open house was held on November 29, 2007 at the Lucchesi Park Community Center, 320 North McDowell Blvd., in Petaluma to give the public an opportunity to review and comment on the document and the project. The Press Democrat Newspaper published the Notice of Availability for the public meeting on November 11, 2007. Caltrans project personnel representing Public Affairs, Environmental Analysis, Biology, Project Management, Design, Noise/Air Quality, Landscape, Right of Way, and Sonoma County Transportation Authority were available to answer questions regarding the project. In addition, Caltrans provided visual boards for the public to observe the layout of the project. Caltrans presented laptops and comment cards for the public to provide their comments. The comment period ended on December 14, 2007. The comments received at the meeting and during the public comment follow.

Over the course of the comment period, nineteen members of the public and 2 agencies submitted comments.

### **Local Citizens Who Provided Comments**

Steve Ahrendt	Gorc Lopez Emamorado
Lorelyn Zaragoza	Evelyn Monticinio Mejia
Augustin Diaz	Carlo Melogno
Ana E. Flores	Martin & Nancy Hromalik
Irineo Gonzalez	Dan Plumley & Peg Saitagina
Eliodoro Tinoco	Fernando P Luis
Linda L. Scott	Ed & Marie Lopus
Gabino Oviedo	Connie Ritchie
Gabino Oviedo	Joe Flores
Lorelyn Zaragoza	

### **Local, State and Federal Agencies Who Provided Comments**

Department of Toxic Substances Control	City of Petaluma
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Email No. 1	Response No.
<p>Name: Steve Ahrendt  Address: 1178 Lindberg Ct.  Other contact information: caltrans@repairguy.net  Affiliation (if applicable):</p> <p>I would like to see a sound wall close to the shoulder and the trees left in place along US 101.</p>	<p>1 2</p>



Email No. 2	Response No.
<p>Name: Lorelyn Zaragoza  Address: 458 Stuart Dr. Petaluma, CA 94954  Other contact information: cell 707.364.3488  Affiliation (if applicable):</p> <p>I came to this open meeting to find out if I could be instrumental or have my voice be heard in regards to the Highway 101 widening project with and more importantly (to me) the addition of the Sound Wall.</p> <p>I would like to say I am willing to pay a bit more in taxes to facilitate the Sound Wall construction in the East Washington area of Petaluma, CA.</p> <p>Thank you for the opportunity to be able to be heard. My family, friends and neighbors in our community would be very excited to be able to use our backyard in a more fun and functional way.</p> <p>The other more important concern of course, would be about the safety of our family, etc. with no sound wall; cars and trucks, big rigs especially are scary. Three houses away from mine, a truck went off the highway and went through the cyclone fence and the trees and backyard stuff and reached the home and crashed into it. That is too close. Our bedrooms face the backyard and it is very disconcerting to constantly hear the horrible sounds that come from the highway.</p> <p>I personally feel that the widening of the Highway 101 and the installation of the Sound Wall would much improve the safety and the beautification of our community.</p> <p>Thank you,</p> <p>Lorelyn Zaragoza  707.364.3488 cell</p>	3

Email No. 3	Response No.
<p>Name: Agustin Diaz  Address: 418 Stuart Drive, Petaluma, CA 94954  Other contact information:  Affiliation (if applicable):</p> <p>I am in agreement to have the wall built. Because during 5 years that we have lived there. There have been 3 accidents in back of my house. This has caused us to be awakened in the middle of the night because of these accidents and it makes us all very nervous.</p> <p>We are also afraid that a tree may fall on top of our house. When it rains or it's windy the tree move a lot and I repeat that we are afraid that a tree may fall on top of our house and hurt someone.</p> <p>My daughter, Mayra has called 2 times and has gone twice to Caltrans to petition that Caltrans do something about the trees and we have been ignored.</p> <p>We also have the problem that the leaves from the trees accumulates especially in the winter and sometimes it brings rats.</p>	<p>4</p> <p>5</p>

Email No. 4	Response No.
<p>Name: Ana E. Flores  Address: 137 Arlington Dr., Petaluma, CA 94952  Other contact information:  Affiliation (if applicable):</p> <p>I very much want the wall. There have been many automobile accidents in the area of our backyard and fires have started there because of that. We have been awakened in the middle of the night and have had to call police to take care of injured people and the fear of fire or auto coming onto our property.</p> <p>Debris from the trees fall onto the property - Garbage and rainwater collects between the freeway and our fence causing an unhealthy environment. My husband has had to clean that area because the stabdubg water goes into our yard and even the garage.</p> <p>The tire wear blowes onto our house and of course the noise pollution makes it difficult to sleep especially in the summertime when heat makes it necessary to open the windows.</p>	<p>6</p> <p>7</p>

Email No. 5	Response No.
<p>Name: Irineo Gonzalez  Address: 446 Stuart Drive  Other contact information:  Affiliation (if applicable):</p> <p>I want the wall built.</p> <p>One of the problems is that since the city does not maintain the area of the freeway during the rainy season the water rushes into our property and it cause flooding. The leaves and debris from the freeway accumulate and causes terrible flooding.</p> <p>I have lived in the house for approximately 8 years and there have been about 5 car accidents in that time. We have had quite a few scares with children playing in our yard and having an accident at that time.</p> <p>I come back to the same problem that the city does not maintain the area and the leaves, garbage, blackberry bushes and all that garbage does not let the water go by. The water stands and it's very dangerous. The trees are not maintained they are breaking and falling apart. They are too tall.</p> <p>Basically, I would love it if Caltrans built the wall and eliminate the trees.</p> <p>About 2 years ago my niece and I took to the neighborhood to collect names on a petition to have the trees maintained cut down and the root maintained. In the winter the roots are so wet that we are afraid that the tree will fall from the bottom. I don't know what Caltrans did with that petition.</p> <p>I know of other neighbors try to maintain their areas but other do not – the trees also cause too much shade and we are not able to glow plants in our yard because it's too dark. We been told that the city does not have money to maintain the trees and that we can't do it either because it's too dangerous.</p> <p>We notice that the Santa Rosa maintains their areas better and that they are also are expanding the freeway.</p> <p>Traffic is a major problem.</p>	<p>8  9  10</p>

Email No. 6	Response No.
<p>Name: Eliodoro Tinoco  Address: 77 Arlington Dr., Petaluma, Ca 94952  Other contact information:  Affiliation (if applicable):</p> <p>My wife Mariana de Tinoco and I have been to several meetings in the past regarding the wall. We would like the wall to be built as soon as possible.</p> <p>We have pictures of accidents that have happened behind and onto our property. If you would like to see them you can see where the fence came down and the car came into our yard and tore down the deck and we have not been able to reconstruct it.</p> <p>There were another accidents where a vehicle threw down a tree and the tree is now leaning against the electrical power lines. The accident happened at 3 a.m. and we had to leave the house and not able to return to the house until 6 a.m. At the time we had babies in the house and we all had to leave and we were all very scared. Actually, I'm always afraid that there will be another accident.</p> <p>There is a creek near our house that during the wintertime grows and comes into our area. There is garbage from the trees and freeway that creates a stoppage and the water accumulates and this water goes into our yard.</p> <p>We also experience too much noise.</p>	<p>11</p> <p>12</p>


Email No. 7	Response No.
<p>Name: Gabino Oviedo  Address: 410 Stuart Drive Petaluma, Ca  Other contact information: baoviedo@yahoo.com  Affiliation (if any):</p> <p>I agree with building the sound proof wall and cutting the trees down, because the trees damage any yard work I do in my back yard, as well that there are some tree branches loose and might fall in the house causing damage to the property and puts my family in danger. Having the trees creates flooding damaging house property, and waste from the leaves creates shelter for animals to leave in. The wall will also diminish the sound my family is disturbed every day and night we are at the house. The wall will help prevent any cars going into the property when any accidents occur due that I am very worried that any cars might danger my family in the house and cause damage to the property..</p>	13




Email No. 8	Response No.
<div data-bbox="428 579 501 638" data-label="Image"></div> <div data-bbox="508 569 688 638" data-label="Text"> <p>Valerie Heusinkveld /D04/Caltrans/CA Gov 12/05/2007 03:21 PM</p> </div> <div data-bbox="698 569 1013 669" data-label="Text"> <p>To RocQuel Johnson/D04/Caltrans/CAGov@DOT cc bcc Subject Fw: Sonoma 101 East Washington Interchange Improvements</p> </div> <div data-bbox="436 686 937 735" data-label="Text"> <p>Valerie Heusinkveld District 4 Office of Environmental Analysis — Forwarded by Valerie Heusinkveld/D04/Caltrans/CAGov on 12/05/2007 03:21 PM —</p> </div> <div data-bbox="433 743 498 812" data-label="Image"></div> <div data-bbox="508 739 675 791" data-label="Text"> <p>Linda L. Scott &lt;lls22toes@sbcglobal.net&gt; 12/05/2007 03:16 PM</p> </div> <div data-bbox="698 749 1075 816" data-label="Text"> <p>To valerie_heusinkveld@dot.ca.gov cc Subject Sonoma 101 East Washington Interchange Improvements</p> </div> <p>Dear Cal Trans;</p> <p>After attending the meeting in Petaluma last Thursday I have additional comments on the project. After living on Arlington Drive for 51 years, I have real concerns of the additional noise this project will cause to the homes on Arlington Drive. By adding the on ramp across the freeway will cause much more car noise as they get onto the freeway. We need Sound Walls added to this project. If you need funding go to the SCTA, City of Petaluma, and your own funding to add the soundwalls. The Soundwall was approved over ten years ago, and you have the 15 years of paper work before that to prove they are badly needed. The noise of things being thrown from cars coming thru the trees and hitting the homes. 9 cars and a bus coming thru the trees and landing in backyards are endangering lives. The ditch for water drainage from Washington creek to Lynch Creek along the back of homes is not enough to keep toxic water from being diverted from a public roadway onto private property. The owners and renters of homes along Arlington don't always have means to upgrade windows to reflect noise and views of the traffic going by the homes because not every home has enough trees to block it. Please consider adding the Soundwall along HWY 101 against Arlington Drive to this project as it will add bounced noise from the other side of the freeway due to the buildings it bounces off of. If you have any questions or want to visit our block please feel free to let us know. Thank you Linda L. Scott 42 Arlington Dr Petaluma Ca 94952</p>	<p>14</p> <p>15</p>



Email No. 9	Response No.												
<p style="text-align: right;">November 14, 2007</p> <p>To who is in charge of letters regarding sound wall concerns:</p> <p>We are all residents of either Stuart Drive or Kresky all of in which back up to the freeway. We all have great concern of the freeway widening with out a sound proof wall. As it is already a four lane freeway two in each direction the noise is sometimes unbearable. We cannot imagine what the noise is going to be like with six lane freeway. Many of us residents are of age or have infants and the noise control is important to our health. Some of us have questions to why sound walls have been built in Santa Rosa areas where no housing is established and yet there are doubts in if there is money to build one where housing is developed. Also, why has a sound wall been built at the new Freitas housing on Lakeville freeway, Caulfield and Washington when the residents there don't even have half of the noise level that we have to deal with? Why and how do those residents get a sound wall put up quickly when all of us residents have waited patiently. We all as neighbors agree that the money that has been set aside should go into the sound wall before the six lane freeway is built and before more money is put into a new East Washington ramp as the Argus courier paper has stated. Let's think about the resident's health and safety for once!!!!!!</p> <table border="1"> <thead> <tr> <th>Residents Name</th> <th>Residents Address</th> </tr> </thead> <tbody> <tr> <td>314 Mark Luciferno</td> <td>450 Stuart Dr Petaluma, CA</td> </tr> <tr> <td>X Chris Kearney</td> <td>362 Stuart Dr. Petaluma, CA</td> </tr> <tr> <td>X 366 Stuart Dr Maria Sanchez</td> <td></td> </tr> <tr> <td>X Karina Barajas</td> <td>426 Stuart Dr Petaluma CA 94954</td> </tr> <tr> <td>X Jose Chavez</td> <td>429 Stuart Dr Petaluma CA 94954</td> </tr> </tbody> </table>	Residents Name	Residents Address	314 Mark Luciferno	450 Stuart Dr Petaluma, CA	X Chris Kearney	362 Stuart Dr. Petaluma, CA	X 366 Stuart Dr Maria Sanchez		X Karina Barajas	426 Stuart Dr Petaluma CA 94954	X Jose Chavez	429 Stuart Dr Petaluma CA 94954	<p>16</p> <p>17</p>
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X Karina Barajas	426 Stuart Dr Petaluma CA 94954												
X Jose Chavez	429 Stuart Dr Petaluma CA 94954												

Email No. 10	Response No.
<p>18, 19</p> <p>November 19<sup>th</sup>, 2007</p> <p>Petaluma City Council And Cal Trans, California</p> <p>Fifty one years ago Hwy 101 was opened by our homes. Nothing since has been improved along this part of the freeway. You are now and have always been diverting water from a public roadway onto private property along the freeway into the backyards of the homes along Arlington. The ditch is not sufficient to divert the water to the creeks at each end of our street. You said you are removing the trees, put in piping to the creeks and building the sound walls. We want to know when?????? If you take out the trees which is our only help from the noise, shaking, and booms all the time, you must replace them with Soundwalls to keep us safe from cars crashing into our homes, things being thrown from cars, and stop endangering the lives of the homeowners and their families. Without the trees or a sound wall you will be responsible for our safety. Thank You.</p> <p> <u>Don Bricker</u> 49 Arlington Drive  <u>Jennifer Bricker</u> 49 Arlington Drive  <u>Brian Jensen</u> 53 Arlington Drive  <u>Angie</u> 53 Arlington Dr.  <u>ALFREDO CASACLECIO</u> 57 Arlington Drive  <u>Patrick Bohler</u> 61 Arlington Dr.  <u>Alan Ritchie</u> 105 Arlington Dr.  264R <u>Cornice Ritchie</u> 105 Arlington Dr.  <u>Lucille Napier</u> 109 Arlington Dr.  <u>Erin</u> 121 Arlington Dr.  <u>Nahell</u> 121 Arlington Dr.  <u>Maria Poma</u> 129 Arlington Drive </p>	<p>18 19</p>



Email No. 11	Response No.
 <p> To: &lt;johnson6501@sbcglobal.net&gt;  To: melanie_brent@dot.ca.gov  12/13/2007 10:10 AM  cc  Subject: Comment on DEIS/R for Marin-Sonoma Narrows HOV Widening Project </p> <p> Some years ago our neighborhood representative, Linda Scott, fought for and won promise of funding for a soundwall for our neighborhood. The money was transferred to the Sonoma County Transit Authority to be used for that purpose. Now I'm hearing that SCTA is saying "What money? We're out of money." Our neighborhood wants our promised soundwall to be included in the Washington Street overcrossing improvement project now in progress, and we want CalTrans to make good on their promise and require that SCTA "find" our money! When we went to the November 29 CalTrans environmental review meeting to request this, the CalTrans representative recommended we go to the City. But that is bad advice because it just gets us into the old run-around as the City tells us they can't build a soundwall on property that doesn't belong to them with money they don't have! The City HAS earmarked some supplemental funding for this project, which is the most which should be expected of them. We SHOULD have been able to ask a SCTA person at the meeting where our funding is, but there was no SCTA rep there. </p> <p> You are adding a northbound onramp directly across the freeway from us. Why do you think you can further hurt us without offsetting relief? </p> <p> Thankfully, our neighborhood gossip system informed those of us living across the street from the freeway that this meeting was being held. Although you probably weren't legally required to notice us, it would have been appropriate to do so. </p> <p> This neighborhood is being treated shamefully by the agencies which should be restoring a reasonable quality of life for us. Toxic runoff has been draining into all the back yards along the freeway for years. We suspect that when CalTrans finally addresses this illegal situation, they will remove the trees, our only protection, in the process, and we'll just be worse off. I believe that this neighborhood is the only place in Sonoma and Marin County where houses are crammed up against the freeway with no relief. As I said, this situation is shameful. </p> <p> Ed and Jo Ann Johnson  46 Arlington Drive  Petaluma, CA 94952  707 762-6501 </p>	20

Email No. 12	Response No.
 <p>           Eckerson, Dean            &lt;deckerson@ci.petaluma.ca.us&gt;            12/14/2007 10:26 AM         </p> <p>           To: &lt;valorie_heusinkveld@dot.ca.gov&gt;            cc:            Subject: US Route 101 East Washington Street Interchange - Initial Study Comments         </p> <p>Valerie:</p> <p>Thank you for the opportunity to comment on the initial study and proposed mitigated negative declaration on the above referenced project. Based upon my review, I offer the following comments for your consideration -</p> <p>2.1.1 Affected Environment          The affected sewer and water facilities are owned and operated by the City of Petaluma and lie within utility easements outside the existing State ROW. Based upon previous discussions with Caltrans representatives, it is the City's understanding the affected sewer and water facilities would be relocated at no cost to the City as part of the subject project, and not by the City of Petaluma, as stated in the proposed mitigated negative declaration.</p> <p>2.3.3 Avoidance, Minimization, and Mitigation Measures          The City understands and supports the proposal to offset impacts from the loss of trees with new tree plantings within the interchange. However, we request the location of any new trees provide adequate clearance from the existing and proposed underground water and sewer facilities to ensure our facilities remain accessible for operational and maintenance purposes, and are not adversely affected by root growth.</p> <p>Please contact me if you have any questions regarding these comments.</p> <p>Dean          Dean Eckerson, P.E.          Engineering Manager          City of Petaluma          Department of Water Resources and Conservation          (707) 778-4546</p>	21



Comment Cards No. 22 & 23	Response No.
<p>2nd COPY of narrow</p> <p><b>COMMENT CARD</b></p> <p>Name (Please Print) <u>Lorelynn Zaragoza</u> <span style="float: right;">20</span> <span style="float: right;">EW</span></p> <p>Address (Home) <u>458 Stuart Dr</u> city <u>Petaluma</u> state <u>CA</u> zip code <u>94954</u></p> <p>Authorized Representative (Name of organization or agency) _____</p> <p>Address (Business) _____ city _____ state _____ zip code _____</p> <p>Comments: <u>We bought our home 3 yrs. ago, and our backyard</u>  <u>faces the freeway. We would absolutely love to</u>  <u>have a sound wall installed. I never go in the</u>  <u>backyard at all because the noise is deafening.</u>  <u>My family and friends would enjoy using the backyard</u>  <u>as it was intended.</u>  <small>For more comments use reverse side.</small>  <u>Thank you,</u></p>	CC-1
<p><b>COMMENT CARD</b></p> <p>Name (Please Print) <u>Gabino Ordoñez</u> <span style="float: right;">21</span> <span style="float: right;">EW</span></p> <p>Address (Home) <u>410 Stuart drive</u> city <u>Petaluma</u> state <u>Ca</u> zip code <u>94954</u></p> <p>Authorized Representative (Name of organization or agency) _____</p> <p>Address (Business) _____ city _____ state _____ zip code _____</p> <p>Comments: <u>I am forward with building the</u>  <u>soundproof wall. I am also forward</u>  <u>with cutting the trees because it</u>  <u>damages any yardwork I do. My house is</u>  <u>also exposed to car accidents. Yes, build the</u>  <u>wall. Pluss</u>  <small>For more comments use reverse side.</small>  <u>The noise of the cars is too loud.</u></p>	CC-2



Comment Cards No. 24 & 25	Response No.
<div data-bbox="440 485 1146 940"> <p><b>COMMENT CARD</b></p> <p>Name (Please Print) <u>Rose Lopez, Enamorado &amp; Carolyn Montemayor</u></p> <p>Address (Home) <u>310 Stuart Dr.</u> city <u>Petaluma</u> state <u>CA</u> zip code <u>94954</u></p> <p>Authorized Representative (Name of organization or agency) <u>(Signature)</u></p> <p>Address (Business) _____ city _____ state _____ zip code _____</p> <p>Comments: <u>We would like to have a wall in between our homes and the freeway, because there is too much noise. We are asking if you share could do something about it.</u>  <u>Thank you so much in advance.</u></p> <p> <b>Caltrans</b></p> <p><small>For more comments use reverse side.</small></p> </div>	<p>CC-3</p>
<div data-bbox="440 989 1146 1451"> <p><b>COMMENT CARD</b></p> <p>Name (Please Print) <u>Linda L Scott</u> <span style="float: right;">EW</span></p> <p>Address (Home) <u>42 Arlington</u> city <u>Petaluma</u> state <u>Ca</u> zip code <u>94952</u></p> <p>Authorized Representative (Name of organization or agency) _____</p> <p>Address (Business) _____ city _____ state _____ zip code _____</p> <p>Comments: <u>Diverting water from a Public Roadway to Private Property. Need better drainage of toxic water. Noise has increased terrible. Soundwall along Arlington. 9 cars &amp; bus into backyards of homes, just missing inside of house.</u>  <u>Nothing on Novato Narrows.</u></p> <p> <b>Caltrans</b></p> <p><small>For more comments use reverse side.</small></p> </div>	<p>CC-4 CC-5</p>

Comment Cards No. 26 & 27

Response  
No.


**COMMENT CARD**

Name (Please Print) Carlo Melogno 25, 26 EW

Address (Home) 314 Stuart Dr. city Petaluma state CA zip code 94954

Authorized Representative (Name of organization or agency) \_\_\_\_\_

Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: We have extreme noise problems,  
unsafe - cars crashing into our home - 7 yrs ago  
Flooding occurs yearly due to clogged ditches  
w/ a pipping. We need a soundwall for noise &  
protection. We also need a solution to drainage problem!  
 For more comments use reverse side.

CC-6  
CC-7


**COMMENT CARD**

Name (Please Print) Martin & Nancy Hromalik 27 EW



Address (Home) 113 Arlington Dr. city Petaluma state CA zip code 94952

Authorized Representative (Name of organization or agency) \_\_\_\_\_



Address (Business) \_\_\_\_\_ city \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

Comments: We are STRONGLY in support of a soundwall. Our  
property backs up to 101 (Southbound). A soundwall would cut traffic  
noise, but more importantly provide some protection in the  
event of a traffic accident. And especially accidents involving flammable  
material or chemicals. The recent accident in the section that involved  
gasoline and which  matted steel, cement etc.  
and shut down traffic for weeks is a prime example. A soundwall may  
provide residents enough time to escape such a catastrophe.

CC-8

Comment Cards No. 28 & 29	Response No.
<div data-bbox="451 457 1156 919"> <p><b>COMMENT CARD</b></p> <p>Name (Please Print) <u>Martin &amp; Nancy Hromalik</u> <u>28</u> <u>EW</u></p> <p>Address (Home) <u>113 Arlington Dr.</u> city <u>Petaluma</u> state <u>CA</u> zip code <u>94952</u></p> <p>Authorized Representative (Name of organization or agency) _____</p> <p>Address (Business) _____ city _____ state _____ zip code _____</p> <p>Comments: We strongly support the construction of a sound wall for reduction in noise and safety reasons. We also believe the speed limit should be reduced through central Petaluma to 55 mph (similar to the speed limit on 101 through central San Rafael). The reduction to 55 mph would save lives and perhaps prevent or reduce the  possibility of <del>the</del> a tank <del>exploding</del> truck accident that ruptures and spills chemicals a (the tank)</p> <p><small>For more comments use reverse side.</small></p> </div>	CC-9
<div data-bbox="451 972 1156 1434"> <p><b>COMMENT CARD</b></p> <p>Name (Please Print) <u>DAVID RUMLEY &amp; PEG SARAGINA</u> <u>29, 30</u> <u>EW</u></p> <p>Address (Home) <u>125 ARLINGTON DR</u> city <u>PETALUMA</u> state <u>CA</u> zip code <u>94952</u></p> <p>Authorized Representative (Name of organization or agency) _____</p> <p>Address (Business) _____ city _____ state _____ zip code _____</p> <p>Comments: MY WIFE &amp; I HAVE LIVED 40 YRS W/O A SOUND WALL AND IT WOULD BE NICE TO HAVE ONE WE CAN GET BY W/O. OUR CONCERN WAS THE RUMOR THAT TREES WOULD BE REMOVED W/O A SOUND WALL BEING INSTALLED. W/O IT OUR ONLY PROTECTION AGAINST HWY TRAFFIC IS A  4' CYCLONE FENCE. TREES ARE OUR ONLY SAFETY FACTOR -</p> <p><small>For more comments use reverse side.</small></p> </div>	CC-10 CC-11






Comment Cards No. 30 & 31	Response No.
<div data-bbox="380 443 1094 905"> <p><b>COMMENT CARD</b></p> <p>Name (Please Print) <u>FERNANDO P LUIS</u> <u>31</u> <span style="float: right;">EW</span></p> <p>Address (Home) <u>346 STUART DR.</u> city <u>Petaluma</u> state <u>CA</u> zip code <u>94954</u></p> <p>Authorized Representative (Name of organization or agency) _____</p> <p>Address (Business) _____ city _____ state _____ zip code _____</p> <p>Comments: <u>We want the wall up before you start adding LANES on 101 because its ALTO NOISE.</u></p> <p><u>Thank you</u></p> <p><u>Fernando Luis</u></p> <p> <small>For more comments use reverse side.</small></p> </div>	CC-12
<div data-bbox="380 940 1094 1396"> <p><b>COMMENT CARD</b></p> <p>Name (Please Print) <u>ED + MARIE Lopez</u> <u>32,33</u> <span style="float: right;">EW</span></p> <p>Address (Home) <u>145 DRLINGTON DR</u> city <u>Petaluma</u> state <u>CA</u> zip code <u>94952</u></p> <p>Authorized Representative (Name of organization or agency) _____</p> <p>Address (Business) _____ city _____ state _____ zip code _____</p> <p>Comments: <u>We need a sound wall south bound exit (Washington St) off ramp - TREE'S ARE dying dead from frost + old age</u></p> <p> <small>For more comments use reverse side.</small></p> </div>	CC-13

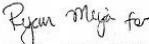
Comment Card No. 32	Response No.
<div data-bbox="440 447 1157 909"> <p><b>COMMENT CARD</b></p> <p>Name (Please Print) <u>Joe Flores</u> <u>39</u> <u>SW</u></p> <p>Address (Home) <u>137 Arlington Dr</u> city <u>Petaluma</u> state <u>CA</u> zip code <u></u></p> <p>Authorized Representative (Name of organization or agency) <u></u></p> <p>Address (Business) <u></u> city <u></u> state <u></u> zip code <u></u></p> <p>Comments:</p> <p><u>Me gustaría que pusieran una pared</u>  <u>como aumentado el Tráfico en 101</u>  <u>mi casa esta muy cerca de el Friguy</u>  <u>y el Ruido del tráfico es muy alto</u></p> <p><b>Caltrans</b> <small>For more comments use reverse side.</small></p> </div>	<p>CC-14</p>


Comment Card No. 33	Response No.
<div data-bbox="378 436 1024 848"> </div> <p>             SOUND FROM A MILE AWAY.              TOW TRUCK LIGHTS CAST A PLEASANT AMBER GLOW OVER YOUR BEDROOM AT 2 AM.              IN THE WEE HOURS HIGHWAY PATROLMAN'S LOUD SPEAKER AMPLIFYING TAKE THE NEXT EXIT REMINDS YOU IT'S TIME TO GET UP AND WATCH OLD MOVIES ON T.V.              THE OPPORTUNITY ARISES TO STUDY THE AUSTRALIAN EUCALPTUS ROOT SYSTEM AND THEIR REPTILIAN HABITAT AS THE TREES HAVE A HABIT OF RECLINING AFTER BEING HIT BY A CAR AT 65 MPH.              IT CREATES BONDING EXPERIENCES WITH YOUR NEIGHBORS AS YOU EXCHANGE INFORMATION ON HOW TO FILE INSURANCE CLAIMS FORMS AFTER AN ERRANT VEHICLE SMASHES YOUR FENCE AND DECKING. THIS ALSO IS THE TIME TO TALK OVER THE HOLDING PROPERTIES OF CERTAIN EXPOXIES FOR THE REPAIR OF YOUR MUCH LOVED GARDEN KNOME.              IF TIMED RIGHT TRUCK JAKE BRAKES CAN BLEEP OUT RUDE LANGUAGE ON YOUR T.V.              DAGUERREOTYPE CAMERAS GET CRYSTAL CLEAR PICTURES OF CAL TRANS WORKERS SURVEYING WHERE PROMINENT, VISUALLY DOMINANT NEW HARDSCAPE STRUCTURES MIGHT OR MIGHT NOT BE LOCATED.              GIVES YOU THE OPPORTUNITY TO READ CAL TRANS LITERATURE AND IMPROVE YOUR DECIPHERING SKILLS...           </p>	<p>CC-15</p>



Letter No. 1	Response No.
<p data-bbox="706 462 852 493">November 19<sup>th</sup>, 2007</p> <p data-bbox="414 525 771 556">Petaluma City Council <i>* Cal Trans;</i></p> <ol data-bbox="446 577 1023 976" style="list-style-type: none"> <li>1. Toxic soil in backyards from water diverted illegally from the Freeway to private property should be tested.</li> <li>2. Peoples lives in danger, 8 cars and 1 bus crashing through the trees into backyards. Where will they land without trees or a soundwall?</li> <li>3. Fumes from the cars and trucks.</li> <li>4. Putting in new drainage pipes for the water.</li> <li>5. Removal permit for Redwoods over 18 inches in diameter.</li> <li>6. Houses on the off ramp, need soundwall just to not have to car lights in there faces.</li> <li>7. And the noise of GET OUT OF YOUR CAR waking you in the middle of the night.</li> <li>8. Please mail us notice of meetings in enough time to attend, both sides of Arlington.</li> </ol> <p data-bbox="430 1008 519 1039">Thank you.</p> <p data-bbox="430 1060 544 1113"><i>LS</i> Linda L. Scott 707-763-1291</p> <p data-bbox="430 1113 820 1218"><i>42 Arlington Drive Petaluma, Ca. 94952</i></p>	<p data-bbox="1226 504 1266 535">34</p>

Letter No. 2, page 1	Response No.
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  <p>Linda S. Adams Secretary for Environmental Protection</p> </div> <div style="text-align: center;">  <p>Department of Toxic Substances Control</p> <p>Maureen F. Gorsen, Director 700 Heinz Avenue Berkeley, California 94710-2721</p> </div> <div style="text-align: center;">  <p>Arnold Schwarzenegger Governor</p> </div> </div> <p>December 14, 2007</p> <p>Ms. RocQuel Johnson California Department of Transportation, District 4 PO Box 23660 Oakland, California 94623</p> <p>Dear Ms. Johnson:</p> <p>Thank you for the opportunity to comment on the Initial Study and Proposed Mitigated Negative Declaration for the US Route 101 East Washington Street Interchange project (SCH # 2007112073) located in Petaluma, Sonoma County. As you may be aware, the California Department of Toxic Substances Control (DTSC) oversees the cleanup of sites where hazardous substances have been released pursuant to the California Health and Safety Code, Division 20, Chapter 6.8. As a Resource Agency, DTSC is submitting comments to ensure that the environmental documentation prepared for this project under the California Environmental Quality Act (CEQA) adequately addresses any remediation activities pertaining to releases of hazardous substances.</p> <p>According to the Initial Study, the project would involve construction, excavation and landscaping work in order to improve the Washington Street interchange, reduce traffic congestion, and enhance drainage. The project would take place within the US 101 Washington Street Interchange right-of-way (ROW). In Table 2-1, the Initial Study states that the project will no result in any increased hazards or hazardous materials risks after construction. During development of project plans, specifications, and estimates, once the exact location of land to be excavated and structures to be modified is known, detailed soil and asbestos surveys will be conducted by CalTrans Office of Environmental Engineering. Any hazardous materials found would be encased or dispose of in accordance with applicable federal and state regulations.</p> <p>DTSC notes that historical use of leaded gasoline may have resulted in aerial deposition of lead from vehicle exhaust, causing surface soils adjacent to roads and highways to become contaminated with lead. Given the potential for lead-contaminated soil at the project site, we strongly recommend that soil surveys should include sampling and analysis of soils for lead.</p> <p>If lead or other hazardous substances have been released, they will need to be addressed as part of this project. For example, if remediation activities at the Site include the need for soil excavation, the CEQA compliance document should include:</p> <p style="text-align: center;">♻️ Printed on Recycled Paper</p>	<p>35</p>

Letter No. 2, page 2	Response No.
<p>Ms. RocQuel Johnson December 14, 2007 Page 2</p> <p>(1) an assessment of air impacts and health impacts associated with the excavation activities; (2) identification of any applicable local standards which may be exceeded by the excavation activities, including dust levels and noise; (3) transportation impacts from the removal or remedial activities; and (4) risk of public upset should be there an accident at the Site.</p> <p>If you have any questions or would like to schedule a meeting, please contact Allan Fone of my staff at (510)540-3836. Thank you in advance for your cooperation in this matter.</p> <p>Sincerely,</p> <p> Denise M. Tsuji, Unit Chief North Coast Cleanup Operations Branch</p> <p>cc: Governor's Office of Planning and Research State Clearinghouse P. O. Box 3044 Sacramento, CA 95812-3044</p> <p>Guenther Moskat CEQA Tracking Center Department of Toxic Substances Control P.O. Box 806 Sacramento, California 95812-0806</p>	

Letter No. 3, page 1		Response No.
<div data-bbox="282 445 389 548">  </div> <div data-bbox="573 464 893 497"> <p><b>CITY OF PETALUMA</b></p> </div> <div data-bbox="636 495 828 535"> <p>POST OFFICE BOX 61 PETALUMA, CA 94953-0061</p> </div> <div data-bbox="329 581 415 611"> <p>Pamela Torliatt Mayor</p> </div> <div data-bbox="329 625 415 718"> <p>Teresa Barrett Samantha Freitas Mike Harris Karen Nau Mike O'Brien David Rabbitt Councilmembers</p> </div> <div data-bbox="433 577 557 600"> <p>December 3, 2007</p> </div> <div data-bbox="433 634 696 735"> <p>Valerie Heusinkveld Branch Chief, Environmental Analysis Caltrans 111 Grand Avenue Oakland, CA 94623</p> </div> <div data-bbox="433 743 995 791"> <p>Re: Sonoma 101 East Washington Interchange Administrative Draft Initial Study - Comments</p> </div> <div data-bbox="433 810 532 831"> <p>Dear Valerie:</p> </div> <div data-bbox="433 840 990 909"> <p>Thank you for including the City of Petaluma in the environmental review process. We have reviewed the above referenced document and have the following comments:</p> </div> <div data-bbox="433 926 573 949"> <p><u>Section 2.2 Traffic:</u></p> </div> <div data-bbox="466 957 1021 1394"> <ol style="list-style-type: none"> <li>1. As stated in our previous comments dated September 14, 2007, the City again requests copies of the technical appendices for this document in order to fully review the LOS calculation. If we have additional comments, we will forward them to you prior to formal approval of this document.</li> <li>2. The City is currently in the process of updating its General Plan to the year 2025. The traffic analysis for the environmental document was based on the traffic count information we provided from the draft updated General Plan traffic model. This model includes a new interchange/cross-town connector at Rainier Avenue, currently in the SPSR process with Caltrans. Due to the proximity of Rainier Avenue to East Washington interchange (less than one mile apart) it will require a design exception from Caltrans. In the event that this improvement is removed, recalculation of the East Washington Interchange model would be required and it would show a detrimental impact on the anticipated benefits of the proposed improvements, as the inclusion of a ramp interchange at Rainier Avenue reduces traffic volumes at the Washington Interchange by as much as 25 percent.</li> <li>3. With regard to the northbound on-ramp configuration, the new ramp provides additional capacity at a relatively short distance to the existing northbound on-ramp. How does the separation at East Washington (~500 feet) differ from the mandatory design exception required to place a new interchange at</li> </ol> </div> <div data-bbox="1164 982 1206 1010"> <p>36</p> </div> <div data-bbox="1164 1100 1206 1127"> <p>37</p> </div> <div data-bbox="1164 1249 1206 1274"> <p>38</p> </div> <div data-bbox="347 1052 427 1071"> <p><b>Public Works</b></p> </div> <div data-bbox="329 1081 427 1123"> <p>Administration 11 English Street Petaluma, CA 94952</p> </div> <div data-bbox="318 1129 427 1186"> <p>Phone (707) 776-4474 Fax (707) 776-3602 E-Mail: <a href="mailto:publicworks@ci.petaluma.ca.us">publicworks@ci.petaluma.ca.us</a></p> </div> <div data-bbox="393 1207 427 1224"> <p><b>Airport</b></p> </div> <div data-bbox="329 1222 427 1276"> <p>601 Sky Ranch Drive Petaluma, CA 94954 Phone (707) 778-4464 Fax (707) 778-4403</p> </div> <div data-bbox="297 1295 427 1314"> <p><b>Corporation Yard</b></p> </div> <div data-bbox="297 1312 427 1379"> <p>(Maintenance &amp; Operations) 840 Hopper St. Ext. Petaluma, CA 94952 Phone (707) 778-4303 Fax (707) 778-4437</p> </div> <div data-bbox="399 1400 427 1417"> <p><b>Transit</b></p> </div> <div data-bbox="329 1415 427 1467"> <p>535 N. McDowell Blvd. Petaluma, CA 94954 Phone (707) 778-4421 Fax (707) 776-3799</p> </div>		



Letter No. 3, page 3	Response No.
<p style="text-align: center;">Resolution No. 2007-205 N.C.S. of the City of Petaluma, California</p> <p style="text-align: center;">REQUESTING CALTRANS WORK WITH THE SONOMA COUNTY TRANSPORTATION AUTHORITY (SCTA) TO SECURE FUNDING AND REQUIRE INSTALLATION OF THE SEGMENT C SOUNDWALLS WITH CONSTRUCTION OF THE MSN PROJECT</p> <p>WHEREAS, the noise level experienced by residents adjacent to US 101, in the vicinity of Segment C of the Marin-Sonoma Narrows (MSN) Project, whether under existing or no build project scenarios, clearly exceeds an acceptable decibel level allowed by federal regulation (Code of Federal Regulations Title 23, Section 772); and,</p> <p>WHEREAS, four of the eight soundwalls noted in the draft environmental document are located in the City of Petaluma; and,</p> <p>WHEREAS, a majority of the residents affected by the those soundwalls have been requesting soundwalls for a number of years; and,</p> <p>WHEREAS, Caltrans will consider a number of factors in making its determination, including whether the soundwalls would substantially reduce noise exposure (at least 5 decibels), they are cost effective, they pose visual impacts or adversely affect environment resources, and they are acceptable/desirable in the local jurisdictions; and,</p> <p>WHEREAS, the environmental document has identified soundwall locations and heights that would reduce the noise exposure (at least 5 decibels); and,</p> <p>WHEREAS, the environmental document has identified a reasonable allowance for the soundwalls located in the MSN Project Segment C; and,</p> <p>WHEREAS, the actual determination of those soundwalls to be constructed will be made prior to the final environmental document.</p> <p style="text-align: center;">Resolution No. 2007-205 N.C.S. <span style="float: right;">Page 3</span></p>	



Letter No. 3, page 4	Response No.
<p>NOW, THEREFORE, BE IT RESOLVED the City Council of the City of Petaluma strongly requests Caltrans work with the Sonoma County Transportation Authority (SCTA) to secure funding for the actual cost of the soundwalls and require installation of the Segment C soundwalls at the time the MSN Project is constructed.</p> <p>Under the power and authority conferred upon this Council by the Charter of said City.</p> <p>REFERENCE: I hereby certify the foregoing Resolution was introduced and adopted by the Council of the City of Petaluma at a Regular meeting on the 3<sup>rd</sup> day of December, 2007, by the following vote:</p> <p>AYES: Barrett, Harris, Vice Mayor Nau, O'Brien, Rabbitt, Mayor Torliatt</p> <p>NOES: None</p> <p>ABSENT: Freitas</p> <p>ABSTAIN: None</p> <p>ATTEST: <u>Deborah Padovan/nes</u> Deputy City Clerk</p> <p><u>Pamela Torliatt</u> Mayor</p> <p>Approved as to form: <u>[Signature]</u> City Attorney</p> <p>Resolution No. 2007-205/N.C.S. Page 2</p>	

## RESPONSES TO WRITTEN PUBLIC COMMENTS RECEIVED

**E=email    CC=comment card    L=Letter**

- E1.1    Input in support of soundwall will be taken into consideration in making our final decision.  
Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- E1.2    This project does not propose to remove trees on the southeast side of Highway 101 before the East Washington Avenue exit.
- E2.3    Input in support of soundwall will be taken into consideration in making our final decision.  
Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- E3.4    Input in support of soundwall will be taken into consideration in making our final decision.  
Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- E3.5    The Caltrans Maintenance Department is looking at various alternatives for re-establishing a lined cement ditch and tree removal along Highway 101.
- E4.6    Input in support of soundwall will be taken into consideration in making our final decision.  
Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- E4.7    The Caltrans Maintenance Department is looking at various alternatives for re-establishing a lined cement ditch and tree removal along Highway 101.
- E5.8    Input in support of soundwall will be taken into consideration in making our final decision.  
Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- E5.9    Caltrans will share your comments with the City of Petaluma.
- E5.10    The Caltrans Maintenance Department is looking at various alternatives for re-establishing a lined cement ditch and tree removal along Highway 101.
- E6.11    Input in support of soundwall will be taken into consideration in making our final decision.  
Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- E6.12    The Caltrans Maintenance Department is looking at various alternatives for re-establishing a lined cement ditch and tree removal along Highway 101.
- E7.13    We have noted your comments on how a sound wall along Highway 101 will provide positive outcomes for your property.
- E8.14    Input in support of soundwall will be taken into consideration in making our final decision.  
Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- E8.15    We have noted your comments on how a sound wall along Highway 101 will provide positive outcomes for your property.
- E9.16    This project will not widen highway 101 between Caulfield Lane and the Lynch Creek overcrossing within the City limits of Petaluma.

- E9.17 Input in support of soundwall will be taken into consideration in making our final decision. Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- E10.18 A new 450-mm drainage system will be constructed to accommodate the runoff from the new northbound Route 101 on-ramp.
- E10.19 No trees on the Northwest side of Highway 101 are proposed to be removed in this project.
- E11.20 Comments noted on the funding and notification of further meetings will be provided. A new 450-mm drainage system will be constructed to accommodate the runoff from the new northbound Route 101 on-ramp.
- E12.21 Caltrans will be handling the utilities process for this project. Water and sewer are relocated at the expense of the State of California, Caltrans, on freeway projects. Caltrans will handle the relocation of the City of Petaluma's water and sewer lines as well as the costs of relocation for the facilities. However, the easement into which these and other facilities will be relocated will be acquired by the City of Petaluma at their cost. There could be other utilities that may be relocated at the expense of the City and or owners cost.  
2. The request for adequate clearance for tree planting will be taken into consideration upon the replanting of vegetation along Highway 101.
- 22.CC-1 Input in support of soundwall will be taken into consideration in making our final decision. Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- 23.CC-2 Comment noted
- 24.CC-3 Input in support of soundwall will be taken into consideration in making our final decision. Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- 25.CC-4 Input in support of soundwall will be taken into consideration in making our final decision. Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- 25.CC-5 A new 450-mm drainage system will be constructed to accommodate the runoff from the new northbound Route 101 on-ramp.
- 26.CC-6 A new 450-mm drainage system will be constructed to accommodate the runoff from the new northbound Route 101 on-ramp.
- 26.CC-7 Input in support of soundwall will be taken into consideration in making our final decision. Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- 27.CC-8 Input in support of soundwall will be taken into consideration in making our final decision. Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- 28.CC-9 Input in support of soundwall will be taken into consideration in making our final decision. Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.
- 29.CC-10 Input in support of soundwall will be taken into consideration in making our final decision. Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.

29.CC-11 No trees on the Northwest side of Highway 101 are proposed to be removed in this project.

Input in support of soundwall will be taken into consideration in making our final decision.

30.CC-12 Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.

Input in support of soundwall will be taken into consideration in making our final decision.

31.CC-13 Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.

Input in support of soundwall will be taken into consideration in making our final decision.

32.CC-14 Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.

Input in support of soundwall will be taken into consideration in making our final decision.

33.CC-15 Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project.

L-1.34 A new 450-mm drainage system will be constructed to accommodate the runoff from the new northbound Route 101 on-ramp. Input in support of soundwall will be taken into consideration in making our final decision. Documentation of the decision will be part of the final environmental document for the Marin-Sonoma Narrows project. Notification of meetings will be provided to all residents on Arlington.

L-2.35 Comments are noted for request for completion of detailed soil and asbestos surveys by Caltrans. Also the recommendation from the Department of Toxic Substances Control that soil surveys should include sampling and analysis of soils for lead.

L-3.36 We have enclosed a copy of the traffic data (Synchro 6 Report 06/04/2004) used to complete the traffic section of the MND document.

L-3.37 If new information shows that the proposed project might not meet its purpose and need, notably congestion reduction, then Caltrans will confer with the Sonoma County Transportation Authority and the City of Petaluma about canceling or altering the proposed project.

L-3.38 At the Northeast Quadrant of the proposed project, a new northbound two-lane ramp would be added with a new bridge to span Washington Creek. Because the new on-ramp at East Washington is a modification on a pre-existing interchange, no mandatory design exception is required.

L-3.39 Public support of the soundwall will be taken into consideration in making our final decision. Documentation of the decision will be a part of the final environmental document for the Marin-Sonoma Narrows project.

## **CHAPTER 5** List of Preparers

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The following is a list of individuals who directly participated in the preparation of this environmental document. The organization listed is a unit of Caltrans unless otherwise indicated.

### **Office of Environmental Analysis**

RocQuel Johnson-Mitchell  
Valerie Heusinkveld  
Melanie Brent

### **Division of Design**

Fariba Zohoury  
Robert Blanco  
Tung Ly

### **Office of Biological Sciences and Permits**

Kelley Nelson  
John Yeakel

### **Office of Advance Planning**

Derek Mann  
Phillip Cox

### **Office of Cultural Resources Studies**

Elizabeth Krase  
Meg Scantlebury

### **Division of Right of Way**

Melanie Hunt  
Edgar Velez  
Beth Perrill

### **Office of Water Quality**

Trang Hoang

### **Office of Landscape Architecture**

Bryan Walker  
Susan Burke  
Evalyn Seidman

### **Office of Highway Operations**

Ethan Tseng  
Evelyn Gestuvo

### **Office of Environmental Engineering**

Shahram Monem  
Glenn Kinoshita

## Consultants: CH2M HILL

<b>Lynne Hosley</b> Project Manager	<b>Deborah Dagang</b> Project Manager
<b>Mark Aikawa</b>	<b>Henry Bass</b>
<b>Greta Kirschenbaum</b> Associate Planner	<b>Maral Kasparian</b> Staff Scientist
<b>Bryan Bell, Alfred Farber</b> Editors	<b>Lisa Lui</b> Graphic Design

### Visual Assessment:

William Kanemoto and Associates



## **CHAPTER 6** List of Technical Studies and Bibliography

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Bay Area Air Quality Management District. 2005. *Bay Area Ozone Strategy Final Adopted Report*.

Caltrans, 2004. *Traffic Operational Analysis Report: US 101/E. Washington Interchange Alternatives Modeling*. July.

Caltrans, 2005. *Air Quality Impact Report for the Marin-Sonoma Narrows Project on State Route 101: From Novato to Old Redwood Highway Interchange in Petaluma, Marin and Sonoma Counties, California*.

Caltrans, 2005. *Traffic Noise Impact Report for the Marin-Sonoma Narrows Project on State Route 101: From Novato to Old Redwood Highway Interchange in Petaluma, Marin and Sonoma Counties, California*.

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Transportation Research Board. 2000. *Highway Capacity Manual*.

2007 *Visual Impact Assessment*. William Kanemoto and Associates.

1997. *Transportation Project-Level Carbon Monoxide Protocol*. Institute of Transportation Studies, University of California at Davis. (2.4)

2001. *EPA Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources*. 66 FR 17229 (CCA, Section 202) (2.4)

CARB *Diesel Risk Reduction Plan*. September, 2000.

U.S. EPA *Transportation Conformity Regulations*.

MTC, *Transportation 2030 Plan for the San Francisco Bay Area: Mobility for the Next Generation*.

FHWA, *Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR Part 772, 2004)*, Noise Abatement Criteria.

Caltrans, 2006. *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects*.

Caltrans, 2006. *Highway Design Manual*

USGS Open File Report 98-460

California Division of Mines and Geology *Guidelines for Evaluating and Mitigating Seismic Hazards*.

Caltrans. *Water Quality Study Report*. May 5, 2007.

## Appendix A: Environmental Significance Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed Project. In many cases, background studies performed in connection with the Project indicate no impacts. A NO IMPACT answer in the right column reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to CEQA, not NEPA, impacts.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district might be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
VI. GEOLOGY & SOILS: Would the project:				
Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
VII. HAZARDS AND HAZARDOUS MATERIALS B Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>

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d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
VIII. HYDROLOGY AND WATER QUALITY: Would the project:				
Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	X	
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
j) Inundation by tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
IX. LAND USE AND PLANNING: Would the project:				
Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
X. MINERAL RESOURCES: Would the project:				

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
XI. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
XII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
XIII. PUBLIC SERVICES				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
XIV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
XV. TRANSPORTATION/TRAFFIC: Would the project:				
a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X



	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
XVI. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Have sufficient water supplies available to serve the project from existing or new entitlements and resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
XVII. MANDATORY FINDINGS OF SIGNIFICANCE:				
Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

# Appendix B: Title VI Policy Statement

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STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

## DEPARTMENT OF TRANSPORTATION

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*Flex your power!  
Be energy efficient!*

January 14, 2005

### TITLE VI POLICY STATEMENT

The California Department of Transportation under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, and age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

A handwritten signature in black ink, reading "Will Kempton".

WILL KEMPTON  
Director

*"Caltrans improves mobility across California"*

## **Appendix C: Protective Features Program and Aesthetics**

### **Mitigation Measures**

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#### **Mitigation Measure 2.3-1: Replacement Landscaping in Southwest Quadrant between Proposed Biostrip and Drainage Ditch**

In the southwest quadrant of the Project, including southbound on-ramp, tall shrubs shall be planted to the maximum feasible extent within available planting areas between the proposed biostrip and drainage ditch. New vines shall also be planted on chain link fence at the Project ROW line.

#### **Mitigation Measure 2.3-2: Enhanced Redwood Planting on Interchange Embankments; Enhanced Redwood Planting in Offsite Locations**

To partially offset impacts from the loss of trees in the Project corridor, additional new redwood plantings shall be installed on the earth embankments within the interchange, particularly near the mainline, consistent with required standard sight lines and other safety considerations. In addition, new redwood groupings shall be planted within the highway ROW in other portions of Route 101 where such plantings are feasible consistent with standard safety considerations including, but not limited to, portions of the highway ROW between Lynch Creek and Corona Road. In the long term, these redwood groupings would provide an enhanced City gateway statement at the interchange, restore a prominent instance of the redwood image that is emblematic of the County and Highway 101 corridor, and partially compensate for the loss of large-scale vegetation elsewhere in the Project segment.

#### **Mitigation Measure 2.3-3: Northbound On-ramp Retaining Wall Mitigation Measures**

Design measures shall be applied to northbound on-ramp retaining walls. Caltrans will coordinate development of these measures with the City of Petaluma. Such measures may include concrete surface texture and color treatments, context-sensitive design themes, or other measures to enhance corridor visual quality. Structure design measures shall be designed to maintain visual and design consistency within the Project limits, and an awareness of, and cohesion with, existing and proposed visual and design themes within the larger Marin and Sonoma County 101 corridor.

To offset potential impacts from intrusion of the new northbound on-ramp, landscaping between the ramp and roadway shall be installed to screen the west-facing retaining wall in the long term.

#### **Mitigation Measure 2.3-4: Visual Screening of Shopping Center Loading Docks**

On the east edge of the proposed northbound on-ramp, where tree removal exposes views of adjoining industrial uses to the highway, visually opaque barriers consisting of 3-foot (1-m) black-vinyl-clad chain link fence with brown slats shall be constructed atop the east ramp retaining wall to visually screen views of motorists into adjoining properties. Vines shall also be planted at the ROW line if feasible.

### **Mitigation Measure 2.3-5: Minimization of Tree Removal in Interchange and on East Washington Street**

To enable preservation of poplars and other trees to the greatest feasible extent, the following measures are proposed:

- Clearing and grubbing within the interchange will be limited to excavation on embankment slope lines
- Existing vegetation outside of clearing and grubbing limits shall be protected from the contractor's operations, equipment, and materials storage
- Tree trimming by the contractor shall be limited to that required to provide a clear work area
- Prior to commencement of roadway construction, high-visibility protective fencing shall be placed around trees that are not subject to removal
- All trees to be removed shall be field-marked for removal by the contractor and verified/approved by the resident engineer prior to removal
- Wherever feasible, slope lines shall be adjusted to avoid tree removal.

### **Mitigation Measure 2.3-6: Replacement Planting Within Interchange**

If preservation of poplars at East Washington Street proves infeasible, replacement planting shall be installed north of the wall on a 1-to-1 basis or greater, using 24-box plant material. Replacement planting with redwood is recommended to enhance the redwood image of the interchange, in coordination with measure VM-2.

### **Mitigation Measure 2.3-7: Preservation of Existing Trees, or Replacement Planting at Frontage of Apartments in Northeast Quadrant**

North of the point where the proposed northbound on-ramp merges with the highway mainline, proposed road widening shall utilize a Type 60C concrete barrier to retain the widened road edge to preserve existing redwood trees at the frontage of adjoining apartments. If removal of any trees in this segment is unavoidable, they shall be replaced in-kind with 24-inch container plant material.

### **Mitigation Measure 2.3-8: Mitigation of Construction-related Light and Glare Impacts**

All nighttime construction lighting shall be shielded and directed to eliminate all direct lighting outside of the construction area. Where substantial headlight glare could affect residences during construction, opaque screening shall be introduced to block such headlight glare for the duration of the construction period. If headlight glare could affect residents at apartments on a long-term basis, permanent screening shall be installed at the highway ROW to block headlight glare.